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CENTRAL INTELLIGENCE AGENCY
PHOTOGRAPHIC INTELLIGENCE REPORT

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CIA/PIR-1003/64

April 1964

THE CHINESE COMMUNIST
AIRCRAFT INDUSTRY [REDACTED]

25X1D



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PREFACE

This report presents the results of a comprehensive study of the Chinese Communist aircraft industry based on photographic interpretation of both airframe and aircraft engine production facilities. The plants are described separately in the report; for comparison purposes, perspective drawings of the various test facilities at the plants are presented together in a separate section. The plants included in this report may not constitute the entire Chinese Communist aircraft industry; however, an extensive search of photography of the Chinese mainland from [REDACTED] indicates that at least the greater part of the industry is included here. This report has been prepared as project C-1782/63 in response to CIA requirement number C-DI3-80,867.

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SUMMARY

The Chinese Communists, with technical assistance from the USSR and the European satellites, began development of a domestic aircraft industry in the early 1950s. The first facilities for aircraft production were developed by rehabilitating and expanding older facilities previously utilized as aircraft repair and maintenance depots. The installations at Shen-yang, Nan-chang, and Peiping were converted to production facilities in this way. The Chu-chou Aircraft Engine Plant was probably converted from a World War II arsenal.

During this period of rehabilitation and expansion, the Chinese Communists apparently realized that additional and more modern facilities would be needed to supply their future aircraft needs. The importance which the Chinese Communist regime attaches to the aircraft industry is apparent from the ambitious program they have initiated for the construction of new and modern aircraft plants. The Ha-erh-pin Aircraft Engine and Airframe Plants and the Ku-tien-tzu Aircraft Assembly and Repair Plant were probably the first totally new

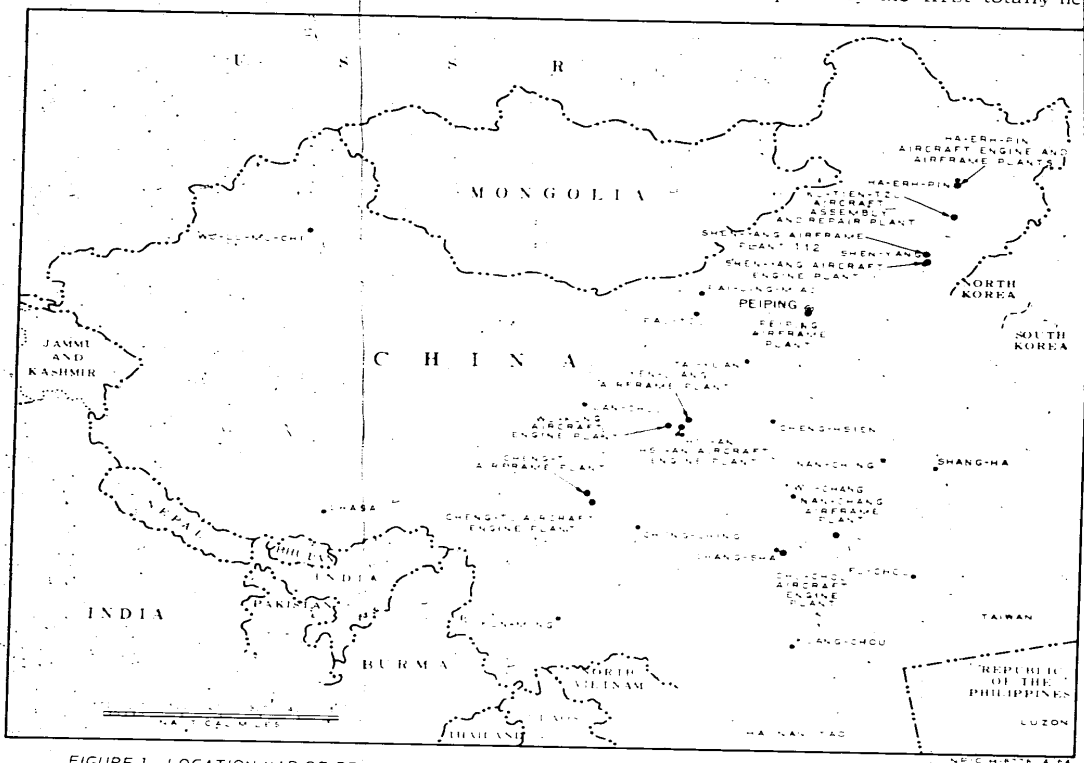


FIGURE 1. LOCATION MAP OF PRINCIPAL INSTALLATIONS OF THE CHINESE COMMUNIST AIRCRAFT INDUSTRY.

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aircraft plants constructed in China. The construction program was well under way by 1959, with airframe plants under construction at Cheng-tu and Yen-liang, and aircraft engine plants under construction at Cheng-tu, Hsi-an, and Wu-kung.

Table 1 presents a summary of current intelligence, derived from photography, concerning the construction status, operational status, floorspace, and expansion of each installation.

Table 1. Summary of the Present Status of the Chinese Communist Aircraft Industry

Installation	Construction Status	Operational Status	Floorspace in 1959-60 (sq ft)	Floorspace on Latest coverage (sq ft)	Percentage of Increase in Floorspace
<u>Airframe Plants</u>					
Cheng-tu Airframe Plant	Under construction	Capable of partial operation	1,540,580	2,115,185	27%
Ha-erh-pin Airframe Plant	Complete	Capable of full operation	Unknown	1,096,475*	
Ku-tien-tzu Aircraft Assembly and Repair Plant	Complete	Capable of full operation	Unknown	751,400	
Nan-chang Airframe Plant	Complete	Capable of full operation	869,975	1,100,000	27%
Peiping Airframe Plant	Complete	Capable of full operation	869,965	2,325,505	63%
Shen-yang Airframe Plant 112	Complete and expanding	Capable of full operation	Unknown	1,962,730*	
Yen-liang Airframe Plant	Under construction	Not operational	Unknown	2,539,975*	
			Total available floorspace	11,870,370	
<u>Aircraft Engine Plants</u>					
Cheng-tu Aircraft Engine Plant	Final stages of construction	Capable of partial operation	1,647,575	3,000,000*	57%
Chu-chou Aircraft Engine Plant	Complete and expanding	Capable of full operation	779,500	1,215,800*	22%
Ha-erh-pin Aircraft Engine Plant	Complete	Capable of full operation	Unknown	1,155,925*	
Hsi-an Aircraft Engine Plant	Under construction	Capable of partial operation	1,147,550	2,620,000	36%
Shen-yang Aircraft Engine Plant	Complete	Capable of full operation	Unknown	4,065,520	
Wu-kung Aircraft Engine Plant	Under construction	Not operational	0	770,805	0%
			Total available floorspace	12,838,050	
			Overall available floorspace	24,708,420	

*Includes buildings under construction.

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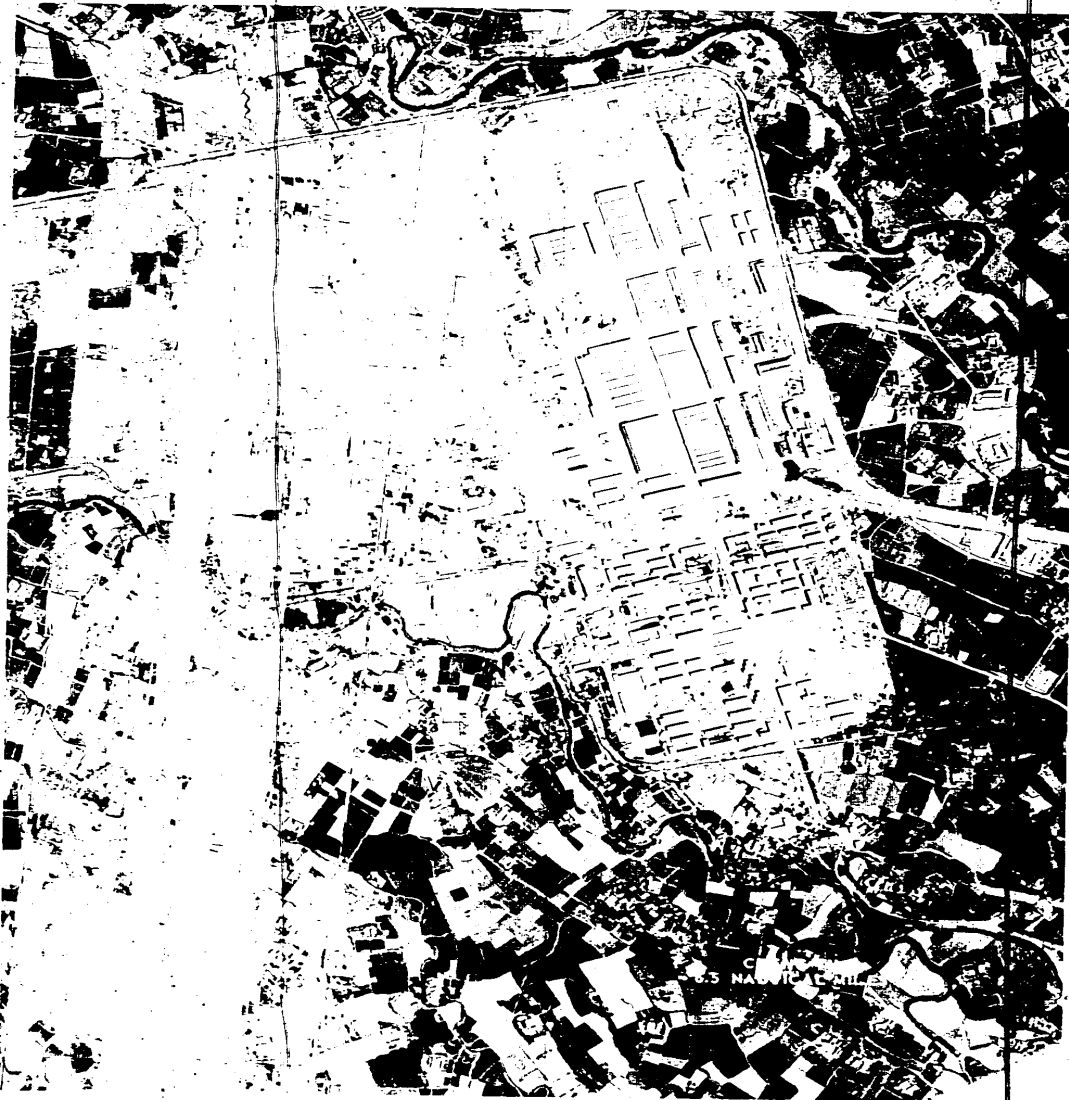


FIGURE 2. CHENG-TU AIRFRAME PLANT.

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AIRFRAME PLANTS

CHENG-TU AIRFRAME PLANT, CHENG-TU, CHINA

(50-42N 103-57E)

25X1A

Cheng-tu Airframe Plant is located adjacent to Cheng-tu, Wen-chiang Airfield 6.5 nautical miles (nm) northwest of the center of Cheng-tu (Figures 1 and 2). Both the airframe plant and the airfield are road and rail served.

When first observed on photography of the airframe plant was under construction and contained approximately 1,540,580 square feet of floorspace. The plant was observed again in

Photography of shows the plant nearing completion, with approximately 2,115,185 square feet of floorspace (Figure 3 and Table 2).

A comparison of photography of with that of shows an overall in-

crease in construction activity and in the amount of building materials in open storage, with progress being made on the final assembly hall (item 1, Figure 3 and Table 2), the POL storage area, and the aircraft test revetment and the runway at the airfield.

Cheng-tu/Wen-chiang Airfield, which is still under construction, will serve the plant as a test and flyaway field. When completed, the airfield will have a north/south concrete runway measuring 8,000 by 190 feet and a full-length parallel taxiway with four crossovers. The aircraft test revetment (item 38, Figure 3 and Table 2) and a final checkout hangar adjoin the airfield. The runway was not serviceable in

25X1D

REFERENCES

25X1D

CHART

25X1A

ACIC, US Air Target Chart, Series 100, 2d ed, Oct 56, scale 1:100,000 (SECRET).

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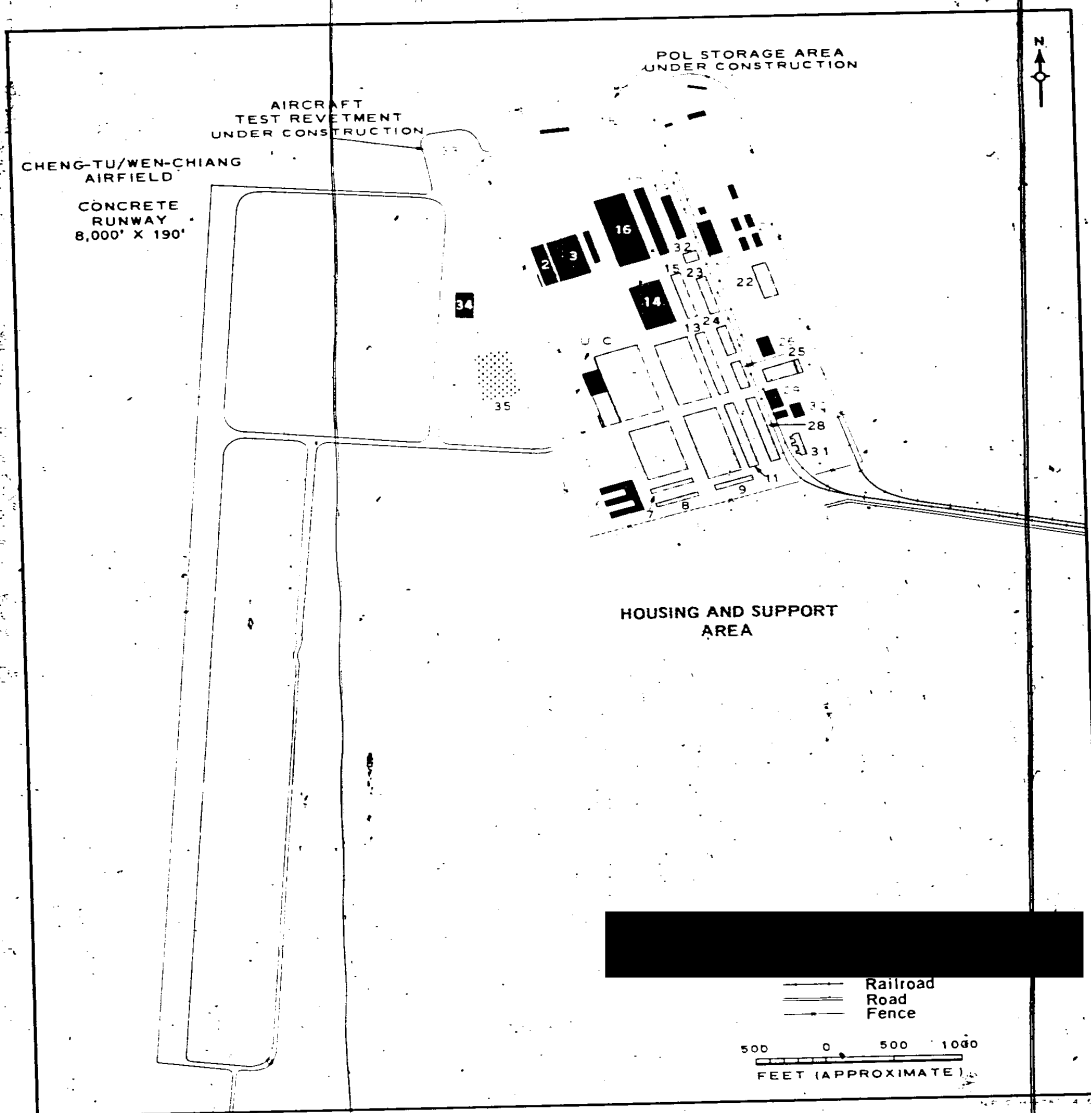


FIGURE 3. LAYOUT OF CHENG-TU AIRFRAME PLANT.

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Table 2. Description of Facilities, Chengdu Airframe Plant and Chengdu Wenchang Airfield
(Items are keyed to Figure 3)

Item	Description Function	Dimensions (ft)	Floorspace (sq ft)
1	Final assembly hall under construction	560 x 120 x 50h	67,200
2	Final assembly hall	360 x 100 x 50h	36,000
3	Subassembly shop	360 x 255	91,800
4	Subassembly shop	640 x 360	230,400
5	Subassembly shop	485 x 325	157,625
6	Laboratory administration	Irregular	54,000
7	Administration	340 x 50	17,000
8	Administration, two stories	340 x 50	34,000
9	Administration, three stories	325 x 50	48,750
10	Subassembly machine shop	610 x 265	161,650
11	Forge	620 x 85	52,700
12	Workshop machine shop	610 x 260	158,600
13	Machine shop	610 x 85	51,850
14	Workshop machine shop	420 x 265	111,300
15	Workshop machine shop	425 x 95	40,375
16	Subassembly machine shop	640 x 260	166,400
17	Workshop machine shop	645 x 95	61,275
18	POL storage area under construction	--	--
19	Warehouse	415 x 80	33,200
20	Workshop	360 x 125	45,000
21	Four storage buildings	120 x 60 (each)	28,800
22	Possible foundry	310 x 125	38,750
23	Warehouse	350 x 85	29,750
24	Workshop	270 x 85	22,950
25	Workshop	260 x 85	22,100
26	Forge foundry	190 x 130	24,700
27	Possible foundry	295 x 125	36,875
28	Workshop-warehouse	620 x 80	49,600
29	Two storage sheds	Various	31,350
30	Gas plant	--	--
31	Steam plant	145 x 125	18,125
32	Workshop	--	--
33	Aircraft test revetment	240 x 145	34,800
34	Final checkout hangar	--	--
35	Construction materials storage	--	--
Total floorspace of numbered buildings			1,956,885
Total floorspace of other buildings			158,000
Total floorspace of plant			2,115,885

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FIGURE 4. HAERH-PIN AIRCRAFT ENGINE AND AIRFRAME PLANTS

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HA-ERH-PIN AIRCRAFT ENGINE AND AIRFRAME PLANTS, HA-ERH-PIN, CHINA

(45-36N 126-34E)

25X1A

Ha-erh-pin Aircraft Engine and Airframe Plants are contiguous plants located 10 nm south of the center of Ha-erh-pin (Figures 1 and 4). The plants are served by road, rail, and the adjacent Ping-fang Airfield.

25X1A

25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

The aircraft engine plant and the airframe plant were first observed on [REDACTED]. The plants were not in operation at the time of this photography but appeared to be in the final stages of construction. In [REDACTED] the aircraft engine plant contained approximately 1,135,925 square feet of floorspace, and the airframe plant contained approximately 1,096,475 square feet of floorspace. 1 On photography of [REDACTED] both plants appeared to have been completed, with no change in floorspace. The operational status of the plants in [REDACTED] could not be determined because of haze and cloud cover on this photography.

The engine test facilities are housed in the

test building (item 34, Figure 5 and Table 3). This building has four projecting wings which contain single test cells served by individual exhaust towers (Figure 29). One wing includes a control and instrumentation section.

Ping-fang Airfield has a northeast-southwest concrete runway measuring 5,500 by 200 feet. The runway is served by a full-length parallel taxiway with three crossovers, three hangars with a fourth under construction, three helicopter pads, and an aircraft test revetment. The final assembly hall is adjacent to the parallel taxiway, indicating that the airfield will serve as a test and flyaway field. One BEAGLE, one COLT, one MOOSE, MAX, and three HOUND were observed at the airfield on [REDACTED]

25X1D

An aluminum rolling mill is located approximately 1.5 nm northwest of the airfield. This mill could supply aluminum for the aircraft engine and airframe plants.

REFERENCES

25X1D

CHART

ACIC, US Air Target Chart, Series 200, Sheet 0253-18AL, 2d ed, Apr 60, scale 1:200,000 (SECRET)

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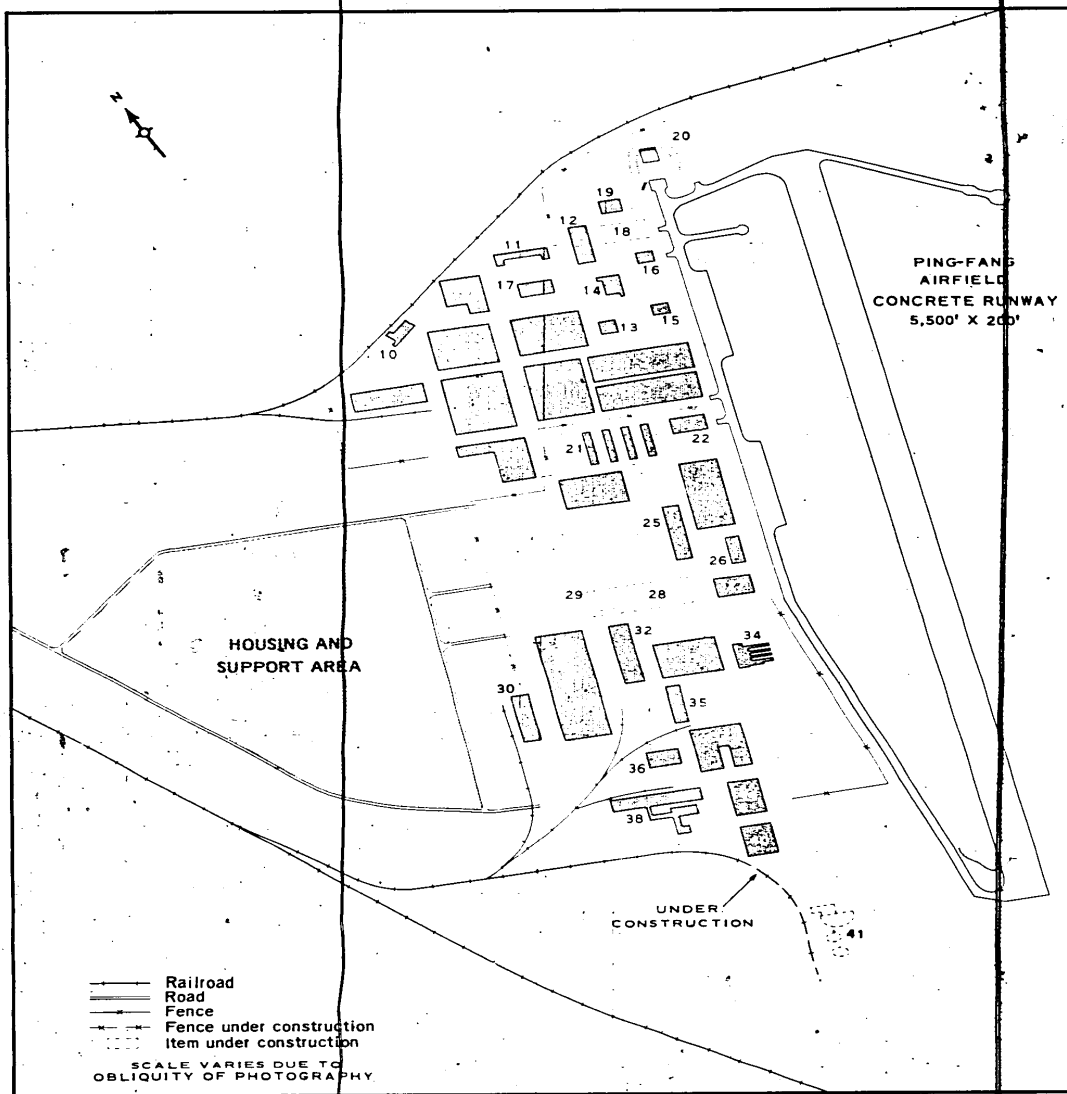


FIGURE 5. LAYOUT OF HA-ERH-PIN AIRCRAFT ENGINE AND AIRFRAME PLANTS.

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CIA/PIR-1003 64

Table 3. Description of Facilities, Workshops, Aircraft Engine and Airframe Plants
(Items are keyed to Figure 5)

Item	Description Function	Dimensions (ft)	Floor-space (sq ft)
Airframe Plant			
			96,100
1	Final assembly hall	620 x 195	120,900
2	Subassembly shop	350 x 350	122,500
3	Subassembly shop	Irregular	68,300
4	Workshop machine shop	390 x 380	148,200
5	Workshop machine shop	440 x 120	52,800
6	Warehouse	390 x 270	105,300
7	Workshop machine shop	420 x 260	109,200
8	Subassembly machine shop	Irregular	58,150
9	Workshop machine shop	--	--
10	Powerplant	Irregular	32,850
11	Administration (three stories)	270 x 100	27,000
12	Workshop machine shop	110 x 80	8,800
13	Workshop machine shop	Irregular	14,175
14	Workshop machine shop	135 x 80	10,800
15	Hangar	135 x 80	10,800
16	Hangar	200 x 120	24,000
17	Workshop	--	--
18	Hangar under construction	130 x 80	10,400
19	Workshop	--	--
20	Aircraft test pavilion	--	--
Total floor-space of numbered buildings			1,020,275
Total floor-space of other buildings			76,200
Total floor-space of airframe plant			1,096,475
Aircraft Engine Plant			
		230 x 45 (each)	41,400
21	Four warehouses	Irregular	26,000
22	Maintenance hangar	390 x 295	79,950
23	Workshop machine shop	365 x 200	73,000
24	Assembly machine shop	240 x 70	23,800
25	Warehouse	165 x 90	14,850
26	Workshop	220 x 120	26,400
27	Workshop machine shop	360 x 190	68,400
28	Building under construction	Irregular	20,450
29	Building under construction	325 x 105	34,125
30	Warehouse	760 x 290	220,400
31	Assembly machine shop	410 x 120	49,200
32	Warehouse	360 x 240	86,400
33	Engine assembly shop	--	--
34	Engine test building (see Figure 29)	240 x 85	20,400
35	Possible foundry	195 x 95	18,525
36	Foundry	Irregular	75,625
37	Forge foundry	--	--
38	Powerplant	240 x 170	40,800
39	Workshop machine shop	220 x 155	34,100
40	Workshop machine shop	--	--
41	Fuel storage, blending, and control station under construction	--	--
Total floor-space of numbered buildings			953,225
Total floor-space of other buildings			202,000
Total floor-space of aircraft engine plant			1,155,225

25X1D

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FIGURE 6. KU-TIEN-TZU AIRCRAFT ASSEMBLY AND REPAIR PLANT. [REDACTED]

25X1D

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KU-TIEN-TZU AIRCRAFT ASSEMBLY AND REPAIR PLANT, CHI-LIN, CHINA

(43-59N 126-24E)

25X1A

25X1A

25X1D

25X1D

25X1D

25X1D

Ku-tien-tzu Aircraft Assembly and Repair Plant, designated in the IDI as Chi-lin Air Force Repair Base Ku-tien-tzu, is located adjacent to the Ku-tien-tzu Airfield [REDACTED] 11.5 nm northwest of Chi-lin (Figures 1 and 6). The plant is served by both road and rail.

When first photographed on [REDACTED] the installation was identified as an aircraft assembly and repair plant, containing approximately 731,400 square feet of floorspace.

Later photography, from [REDACTED] showed no apparent change in facilities or floorspace at the plant. The presence of airframe crates and smaller component crates in the plant area indicates that the plant probably assembled aircraft from shipments received from the Soviets.

The plant appears to be a major repair facility for both airframes and aircraft engines;

this interpretation is supported by the large number of aircraft observed at the airfield and on the parking ramp adjoining the plant. The repair of aircraft engines is evident from the presence of an engine test building and an aircraft test revetment. The engine test building (item 6, Figure 7 and Table 4) has three projecting wings, two housing single test cells and one housing a double test cell (Figure 31). One wing includes a control and instrumentation section.

The adjacent Ku-tien-tzu Airfield has a northeast-southwest concrete runway measuring 6,400 by 200 feet. The runway is served by a full-length parallel taxiway with four crossovers and numerous hardstands and parking/assembly aprons. Repair hangars are also present at the airfield. At the time of [REDACTED] FAGOT, FRESCO and 3 BEAGLE were visible at the airfield.

25X1D

REFERENCES

PHOTOGRAPHY

25X1D

CHART

ACIC, US Air Target Chart, Series 200, Sheet 2200-3A, 2d ed, May 61, scale 1:200,000 (SECRET)

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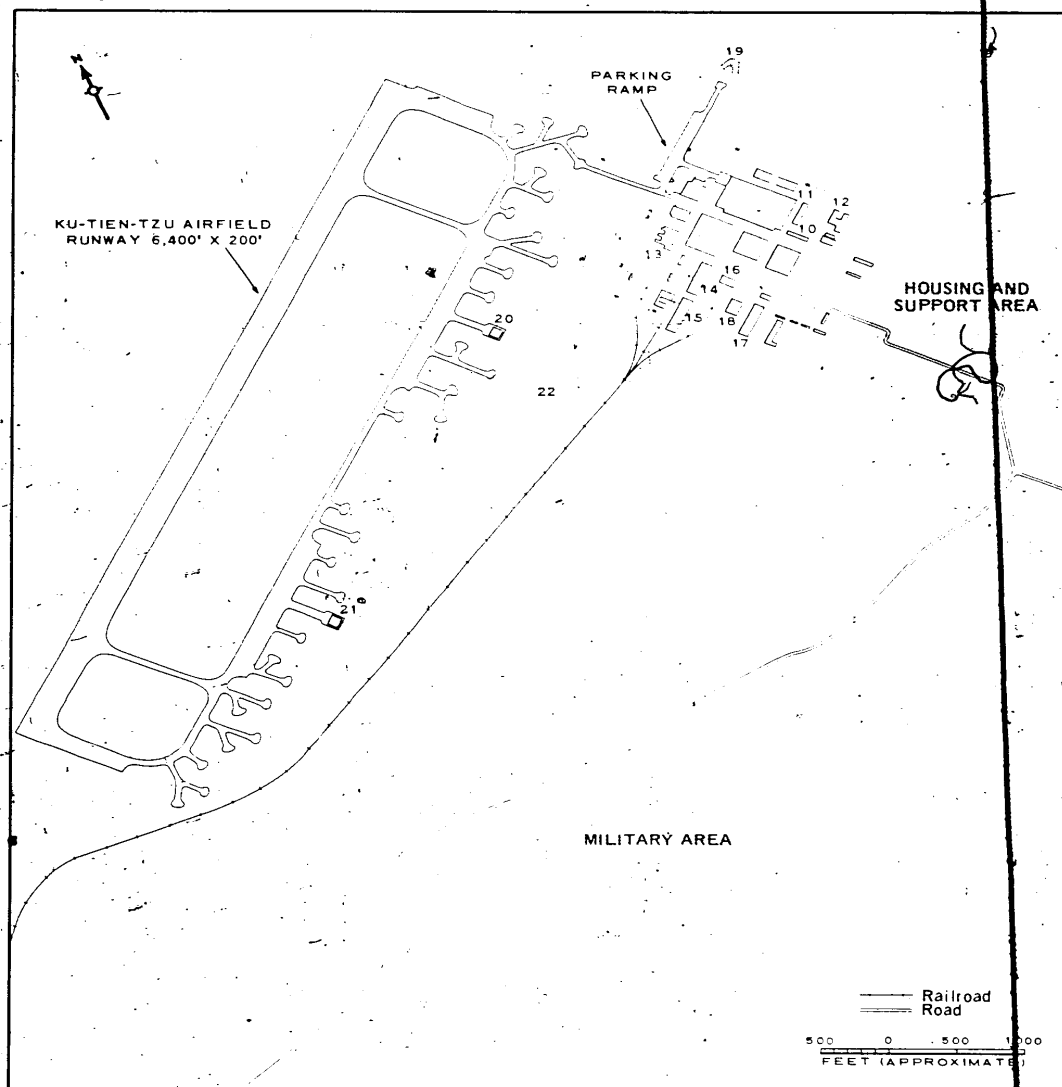


FIGURE 7. LAYOUT OF KU-TIEN-TZU AIRCRAFT ASSEMBLY AND REPAIR PLANT.

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Table 4. Description of Facilities, Khatlan Airfield Assembly and Repair Plant
(Items are keyed to Figure 7)

Item	Description Function	Dimensions (ft)	Floorspace (sq ft)
1	Final assembly hall	510 x 100 x 50h*	51,000
2	Subassembly shop	Irregular	131,250
3	Two storage sheds	Various	25,200
4	Repair hangar	Irregular	30,750
5	Repair hangar	Irregular	15,750
6	Engine test building (see Figure 31)	--	--
7	Workshop machine shop	325 x 280	91,000
8	Forge foundry	220 x 200	44,000
9	Workshop machine shop	240 x 190	45,600
10	Warehouse	200 x 60	12,000
11	Warehouse	230 x 60	13,800
12	Two dining halls	Various	23,900
13	Fuel storage, blending, and control station	--	--
14	Warehouse, rail served	300 x 90	27,000
15	Warehouse, rail served	320 x 100	32,000
16	Powerplant	--	--
17	Warehouse	330 x 90	29,700
18	Transformer yard	--	--
19	Aircraft test revetment	--	--
20	Repair hangar	--	--
21	Repair hangar	--	--
22	Airfield support area	--	--
Total floorspace of numbered buildings			572,350
Total floorspace of other buildings			158,450
Total floorspace of plant			730,800

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FIGURE 5. NAN-CHANG AIRFRAME PLANT

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NAN-CHANG AIRFRAME PLANT, NAN-CHANG, CHINA

25X1A

(25X1A 115-55E)

25X1A

Nan-chang Airframe Plant, designated in the TDI as Nan-chang Aircraft Repair and Assembly Plant, is located adjacent to the Nan-chang New Airfield [REDACTED] 3.5 nm southeast of the center of Nan-chang (Figures 1 and 8). The plant is served by both road and rail.

containing approximately 230,025 square feet of floorspace, which increase the plant's total floorspace to approximately 1,400,000 square feet (Figure 9 and Table 5). The additions indicate that it is now possible for the plant to fabricate airframes.

25X1D

This plant was identified as an aircraft repair and maintenance depot when first photographed in [REDACTED]. Later photography of the plant, from [REDACTED]

The adjacent Nan-chang New Airfield has a northeast southwest concrete runway, which has been extended from 5,000 feet in [REDACTED]

25X1D

25X1D

[REDACTED] shows that the installation contained approximately 869,975 square feet of floorspace at that time and was capable of assembly as well as repair and maintenance of aircraft. A comparison of photography from [REDACTED]

to its present dimensions of 7,600 by 230 feet. The runway is served by two crossovers and two taxiways, which connect the runway to a parking ramp adjoining the airframe plant. Four COLT were observed at the airfield in [REDACTED] (Figure 8).

25X1D

25X1D

[REDACTED] shows additions

25X1D

REFERENCES

PHOTOGRAPHY

25X1D

CHART

ACIC: US Air Target Chart, Series 200, Sheet 0490-23, 1st ed, Apr 59, scale 1:200,000 (SECRET)

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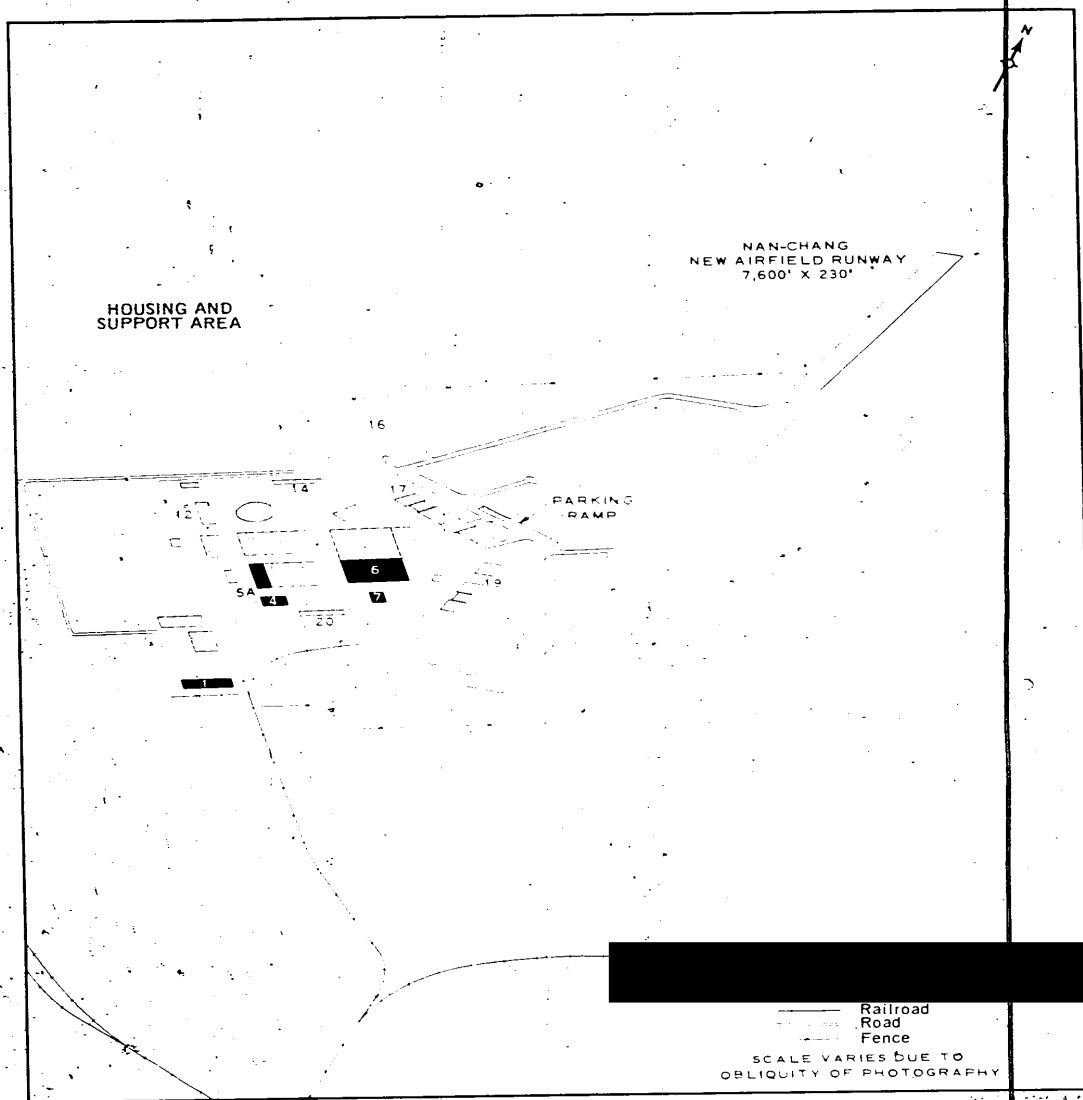


FIGURE 3. LAYOUT OF NAN CHANG AIRFRAME PLANT.

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Table 1. Description of Facilities, Nan-chang Aircraft Plant
(Items are keyed to Figure 9)

Item	Description Function	Dimensions (ft)	Floorspace (sq ft)
1	Workshop	240 x 80	19,200
2	Workshop	280 x 160	44,800
3	Powerplant	--	--
4	Probable foundry	155 x 115	17,825
5	Workshop machine shop	410 x 310	127,100
5a	New section	410 x 120	49,200
6	Subassembly machine shop	380 x 350	133,000
7	Workshop	120 x 90	10,800
8	Subassembly shop	470 x 380	178,600
9	Final assembly hall	470 x 155 x 55h*	72,850
10	Workshop machine shop	430 x 340	146,200
11	Workshop machine shop	350 x 115	40,250
12	Workshop machine shop	280 x 100	28,000
13	Engineering laboratory	Irregular	59,000
14	Administration, two stories	Irregular	36,000
15	Workshop machine shop	235 x 155	36,425
16	Aircraft test revetment	--	--
17	Two repair hangars	--	--
18	Repair hangar	--	--
19	Three repair hangars	Irregular	43,500
20	Administration, two stories	--	--
Total floorspace of numbered buildings			1,042,750
Total floorspace of other buildings			57,250
Total floorspace of plant			1,100,000

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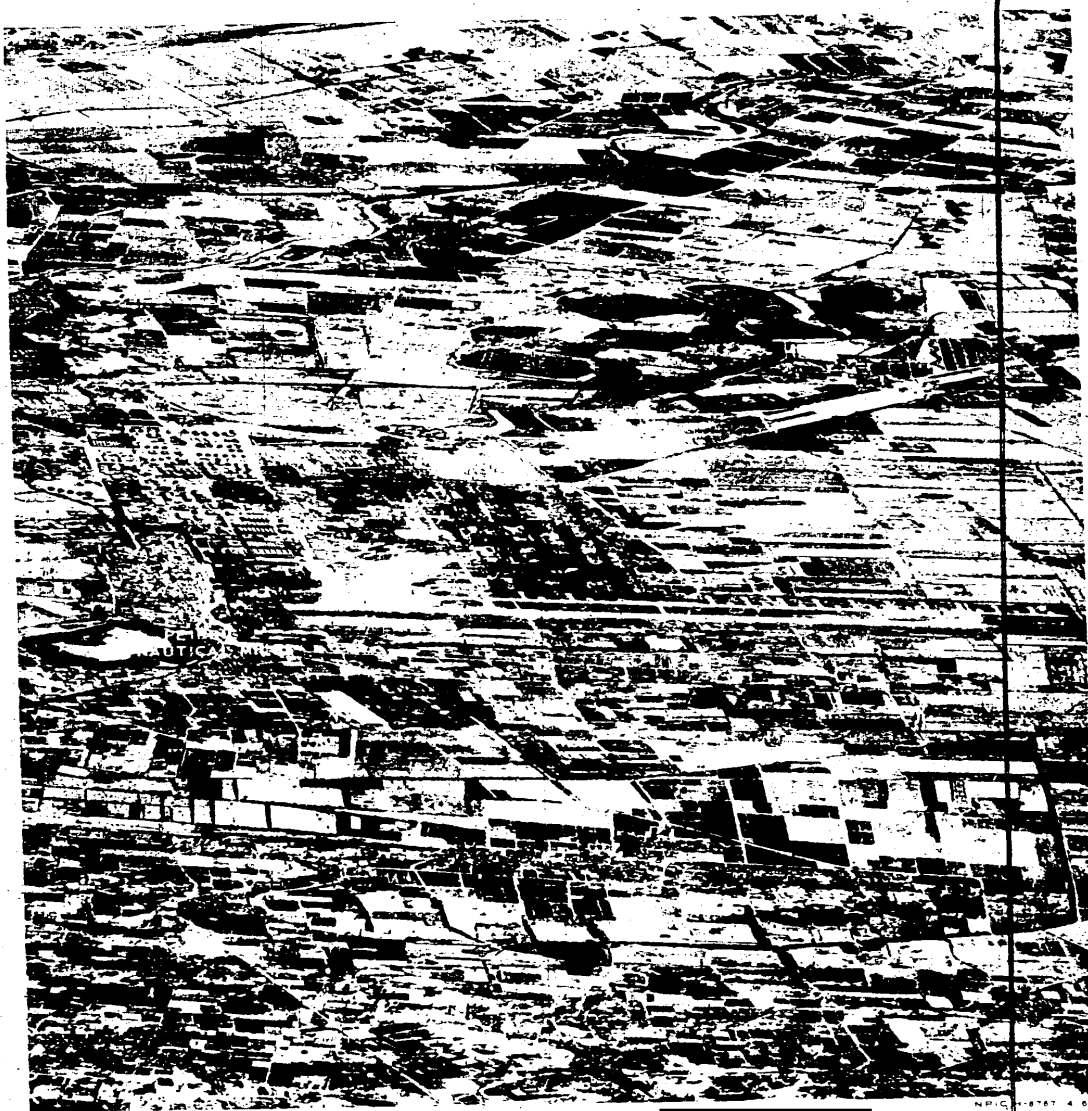


FIGURE 10. PEIPING AIRFRAME PLANT, [REDACTED]

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PEIPING AIRFRAME PLANT, PEIPING, CHINA

25X1A

(39-48N 116-25E) [REDACTED]

25X1A

25X1A

Peiping Airframe Plant is located adjacent to the Peiping Nan-yuan Airfield [REDACTED] 7.5 nm south of the center of Peiping (Figures 1 and 10). Prior to the present report this plant has been designated as the Peiping Aircraft Repair Shop Nan-yuan. The plant is served by both road and rail.

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25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

The airframe plant was first photographed on [REDACTED]. This photography shows the repair plant to have consisted of both repair and assembly facilities, with floorspace of approximately 863,965 square feet. The plant was later observed on [REDACTED]

[REDACTED] a comparison of the [REDACTED] photography with that of [REDACTED] shows that considerable change had occurred in the installation. There had been an overall expansion, but some of the repair facilities present in [REDACTED] had been removed. The amount of expansion and the type of facilities added between [REDACTED] indicate that the plant's activities were no longer limited to the repair and assembly of aircraft.

The plant was photographed again on [REDACTED] (Figure 10). A comparison of the [REDACTED] photography with that of [REDACTED] shows a continuation of construction activity and the addition of a new final assembly hall. On this photography some of the facilities added, since [REDACTED] appear to be administration or laboratory-type buildings, [REDACTED]

[REDACTED] The plant now contains approximately 2,325,505 square feet of floorspace (Figure 11 and Table 6).

The adjacent Peiping Nan-yuan Airfield, which serves the plant as a test and flyaway field, has a north-south concrete runway measuring 10,000 by 200 feet. The runway is served by a full-length taxiway with four crossovers and numerous hardstands, and parking assembly aprons. The aircraft observed on [REDACTED] could not be identified because of the obliquity of the photography.

25X1D

25X1D

25X1D

25X1D

25X1D

25X1B

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REFERENCES

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CHART

ACIC: US Air Target Chart, Series 200, Sheet 0151-1A, 1st ed., Jan 61, scale 1:200,000 (SECRET)

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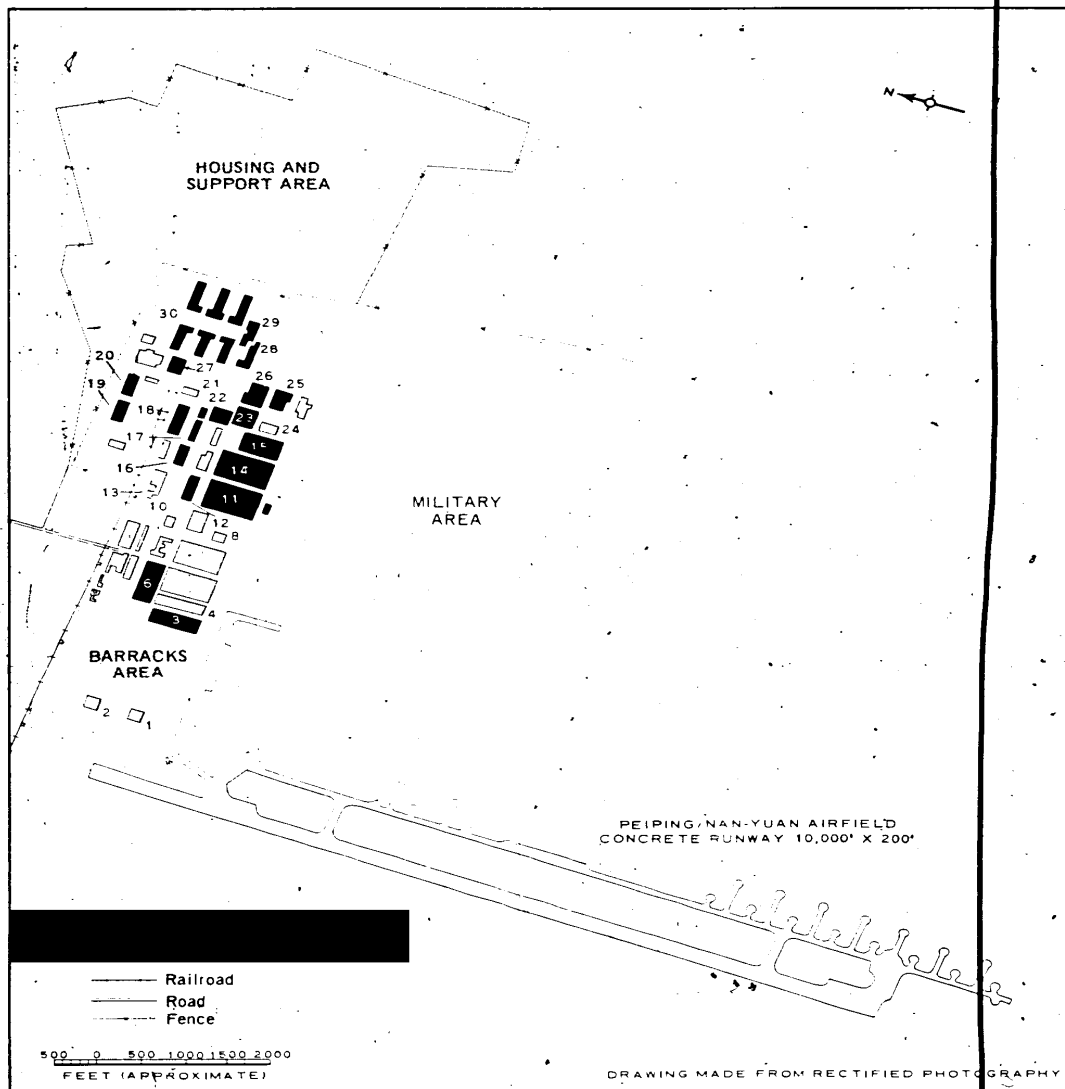


FIGURE 11. LAYOUT OF PEIPING AIRFRAME PLANT.

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Table G. Description of Facilities, Polping Airframe Plant
(Items are keyed to Figure 11)

Item	Description Function	Dimensions (ft)	Floorspace (sq ft)
1	Repair hangar	170 x 140	23,800
2	Repair hangar	170 x 140	23,800
3	Final assembly hall	610 x 205 x 65h*	125,050
4	Final assembly hall	600 x 150 x 50h*	90,000
5	Subassembly shop	600 x 310	186,000
6	Subassembly shop	570 x 205	116,850
7	Workshop machine shop	535 x 350	187,250
8	Repair hangar	180 x 140	25,200
9	Workshop	250 x 175	43,750
10	Administration, two stories	Irregular	31,300
11	Subassembly machine shop	565 x 365	206,225
12	Workshop	300 x 100	30,000
13	Powerplant	--	--
14	Workshop machine shop	565 x 365	206,225
15	Workshop machine shop	495 x 280	138,400
16	Possible foundry	220 x 110	24,200
17	Workshop	280 x 50	14,000
18	Warehouse	450 x 110	49,500
19	Warehouse	280 x 140	39,200
20	Warehouse	280 x 140	39,200
21	Foundry	190 x 115	21,850
22	Workshop	200 x 170	34,000
23	Warehouse	220 x 200	44,000
24	Repair hangar	215 x 130	27,950
25	Warehouse	Irregular	3,000
26	Possible test building	Irregular	25,450
27	Possible foundry	180 x 120	21,600
28	Administration, two stories	Irregular	6,000
29	Administration, two stories	Irregular	25,000
30	8 x administration laboratory-type buildings, two stories	Irregular	26,000
Total floorspace of numbered buildings			2,147,000
Total floorspace of other buildings			138,507
Total floorspace of plant			2,285,507

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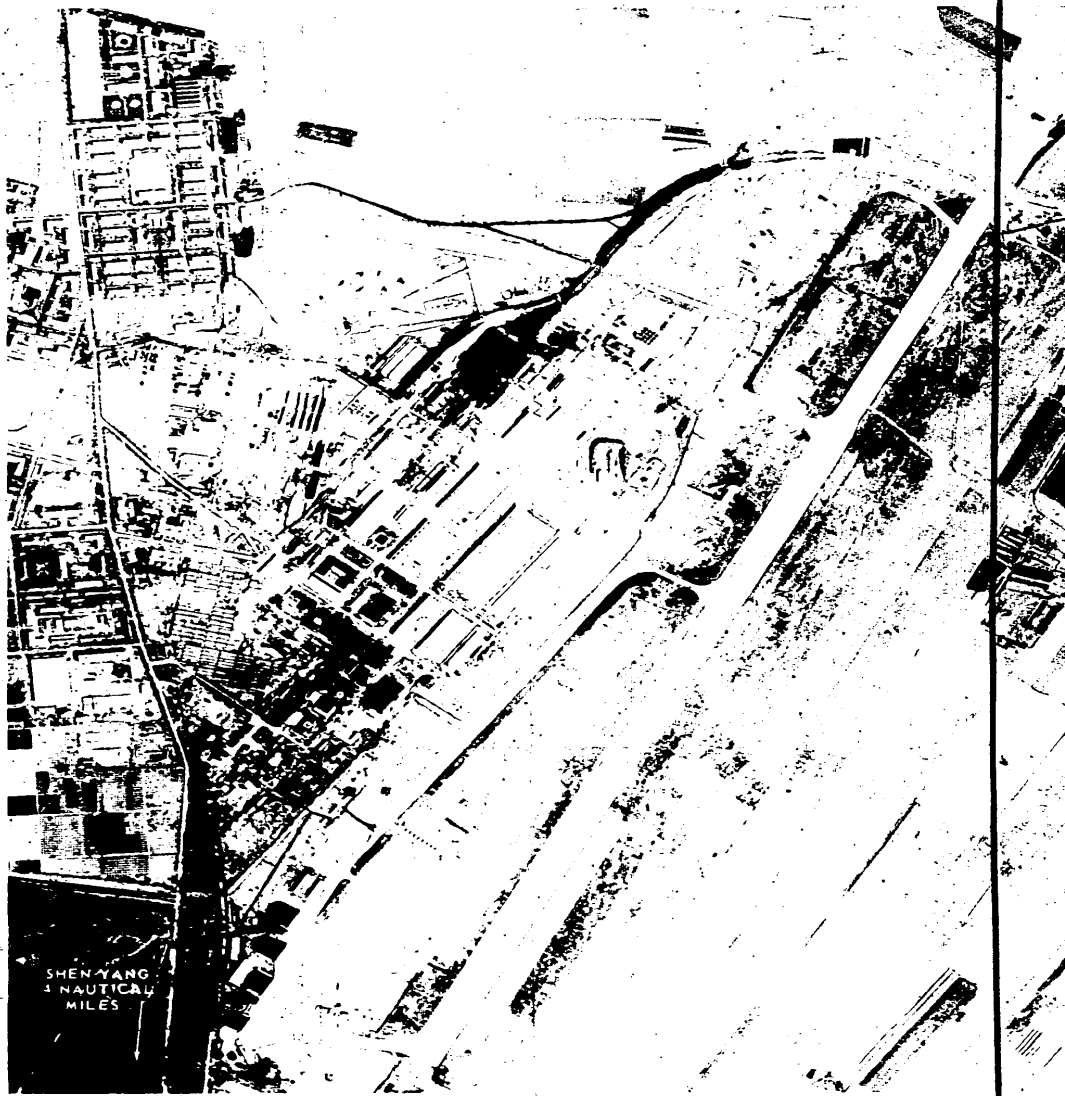


FIGURE 12. SHEN-YANG AIRFRAME PLANT 112

- 24 -

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CIA/PIR-1003/64

SHEN-YANG AIRFRAME PLANT 112, SHEN-YANG, CHINA

(41-51N 123-25E)

25X1A

25X1A

25X1A

Shen-yang Airframe Plant 112 is located adjacent to Shen-yang Airfield North 4 nm north-northeast of the center of Shen-yang (Figures 1 and 12). The plant was formerly known as the Shen-yang Aircraft Manufacturing Company Plant No 2. It is served by both road and rail.

This installation, when first observed on World War II prestrike, strike, and poststrike photography, was an aircraft repair and maintenance depot containing approximately 361,640 square feet of floorspace. This photography indicates that little or no damage had resulted from aerial bombardment. Photography of

25X1D

25X1D

reveals that the original aircraft depot had been expanded into a modern plant, capable of fabricating and assembling aircraft in addition to performing repair and maintenance. The expansion increased the total floorspace to approximately 1,586,340 square feet.

25X1D

25X1D

25X1D

25X1D

A comparison of photography from with that of shows that considerable construction activity had taken place during this interval, which

increased the plant's total floorspace to approximately 1,962,730 square feet (Figure 13 and Table 7). Additions since include a subsonic wind tunnel and a gas dynamics facility consisting of a possible supersonic wind tunnel and a battery of 15 pressurized tanks, with bases available for nine additional tanks (Figure 26). More recent photography of the airframe plant, from

25X1D

25X1D

25X1D

shows no apparent change in facilities or floorspace; some construction activity is evident, however, on the taxiway at the adjacent airfield.

Shen-yang Airfield North has a north/south concrete runway, which has been extended from 6,600 feet in to its present dimensions of 9,900 by 280 feet. The runway is served by four crossovers, one of which is under construction, and by a parallel taxiway which is being extended to the north. Repair facilities, parking and assembly aprons, and an aircraft test revetment (Figure 36) are also located at the airfield. Nine FARMER, one FAGOT/FRESCO, and one MOOSE MAX were observed at the airfield in

25X1D

25X1D

REFERENCES

25X1D

CHART

ACIC, US Air Target Chart, Series 200, Sheet 0290-11HL, 3d ed., Dec 61, scale 1:200,000 (SECRET)

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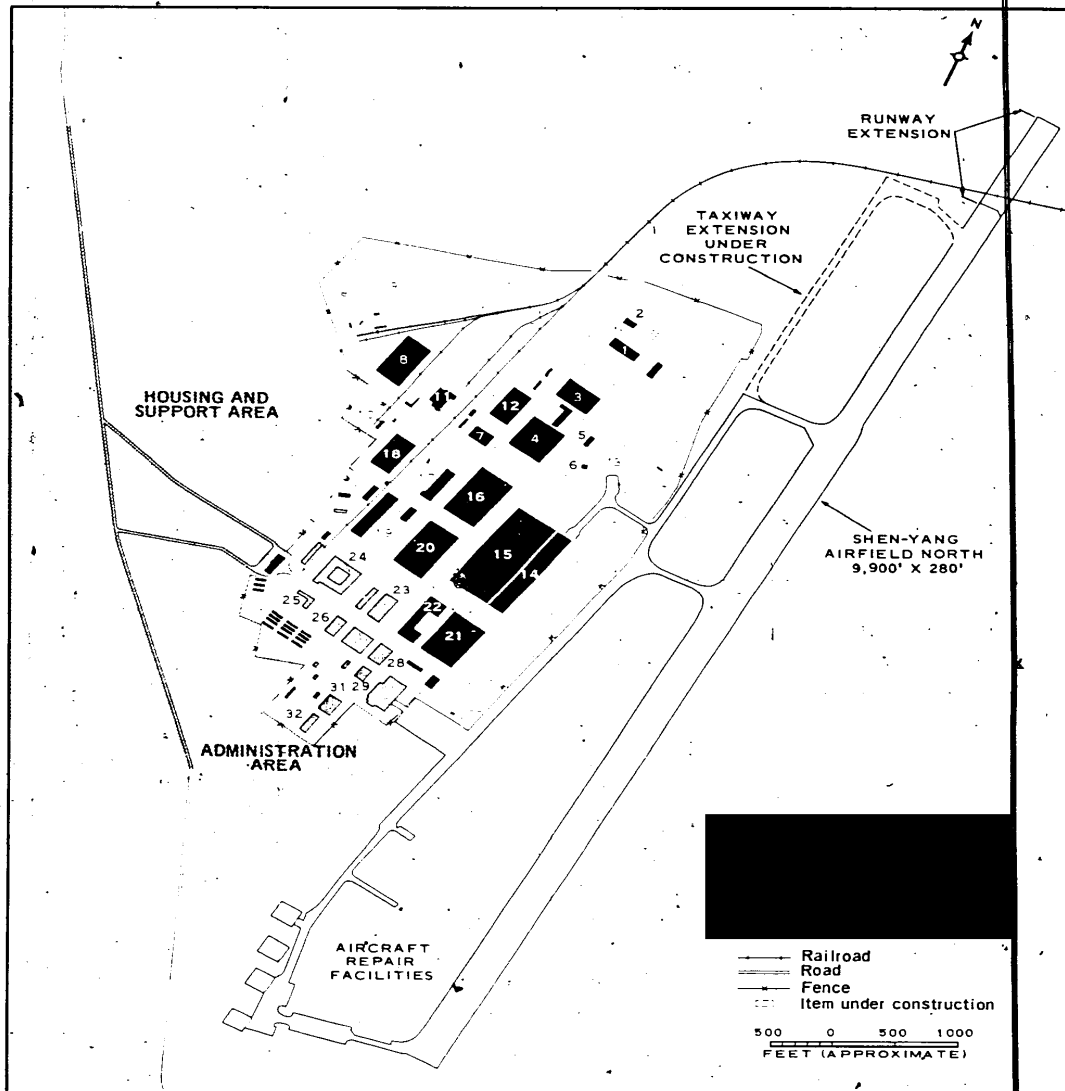


FIGURE 13. LAYOUT OF SHEN-YANG AIRFRAME PLANT 112.

- 26 -

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25X1D

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CIA/PIR-1003/64

Table 7. Description of Facilities, Shen-yang Airframe Plant 112
(Items are keyed to Figure 13)

Item	Description Function	Dimensions (ft)	Floor space (sq ft)
1	Wind tunnel (see Figure 26)	--	--
2	Gas dynamics facility (see Figure 26)	--	--
3	Workshop machine shop under construction:		
	Completed section	340 x 180	61,800
	Section under construction	340 x 180	61,800
4	Workshop machine shop	360 x 325	117,000
5	Unidentified building	100 x 50	5,000
6	Unidentified building	75 x 40	3,000
7	Workshop	190 x 120	22,800
8	Workshop/warehouse	415 x 230	95,450
9	Probable POL storage area	--	--
10	Transformer yard	--	--
11	Powerplant	--	--
12	Workshop machine shop	330 x 165	54,450
13	Aircraft test revetment (see Figure 36)	--	--
14	Final assembly hall	870 x 130 x 55h	113,100
15	Subassembly shop	870 x 400	348,000
16	Subassembly shop	530 x 330	174,900
17	Forge foundry	340 x 100	34,000
18	Workshop machine shop	365 x 175	63,875
19	Warehouse	495 x 120	59,400
20	Subassembly machine shop	500 x 330	165,000
21	Subassembly machine shop	455 x 310	141,050
22	Engineering workshop	Irregular	37,795
23	Workshop machine shop	300 x 130	39,000
24	Administration engineering	Irregular	48,110
25	Administration	Irregular	12,000
26	Warehouse	210 x 110	23,100
27	Workshop machine shop	210 x 210	44,100
28	Workshop	210 x 135	28,350
29	Workshop	130 x 115	14,950
30	Repair hangar	Irregular	51,900
31	Workshop	190 x 140	26,600
32	Administration, two stories	200 x 45	18,000
Total floor-space of numbered buildings			1,862,730
Total floor-space of other buildings			100,000
Total floor-space of plant			1,962,730

25X1D

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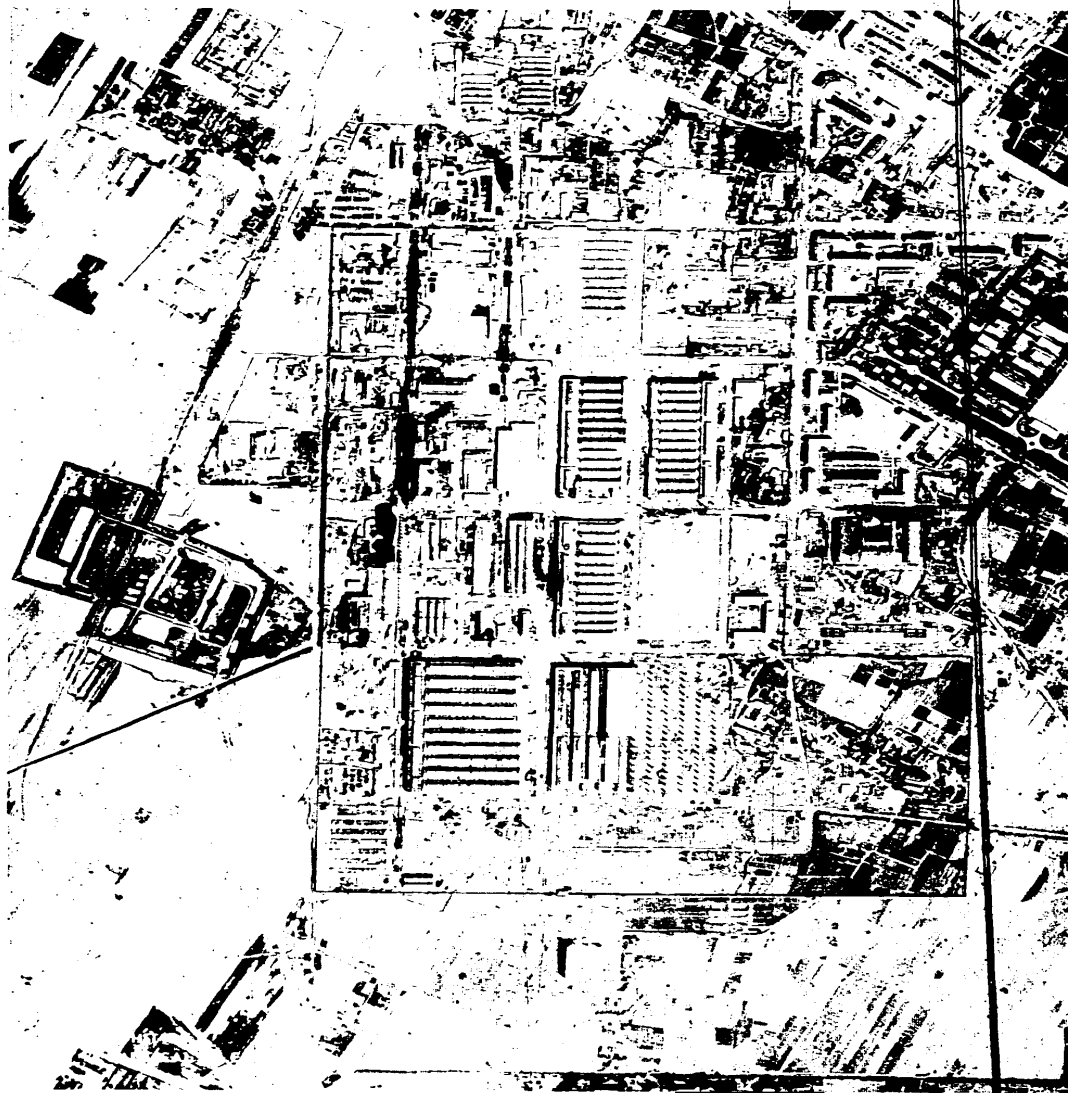


FIGURE 14. YEN-LIANG AIRFRAME PLANT.

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CIA/PIR-1003/64

YEN-LIANG AIRFRAME PLANT, YEN-LIANG, CHINA

(34-39N 109-16E)

25X1A

25X1A

25X1A

25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

Yen-liang Airframe Plant, designated in the Bk as Hsi-an Airframe Plant Yen-liang Airfield, is located adjacent to the Yen-liang Airfield, 22 nm north-northeast of Hsi-an, China (Figures 1 and 14). The plant and the airfield are served by both road and rail.

The airframe plant was first observed under construction on [REDACTED] Figures 14 and 15). The buildings completed or nearing completion in [REDACTED] contain approximately 1,470,275 square feet of floorspace; the buildings that were then in early or partial stages of construction will contain an additional estimated 1,068,800 square feet of floorspace when completed (Table S). 1

[REDACTED] show no apparent change in facilities or construction status since [REDACTED] indicating that the construction

of this plant is at a standstill.

There does not appear to be a final assembly hall sufficiently large for the production of aircraft of greater than fighter size; however, ample space is available at the plant for such a structure.

The adjacent Yen-liang Airfield will probably serve the plant as a test and flyaway field. The airfield has a northeast/southwest concrete runway measuring 8,400 by 230 feet and a full-length parallel taxiway with five crossovers. A firing-in butt and three repair hangars are located at the airfield. At present there is no indication of a connecting taxiway between the airframe plant and the airfield. The alignment of this taxiway would depend on the ultimate location of the final assembly hall. Two COLT and two FAGOT FRESCO were observed at the airfield in [REDACTED]

25X1D

REFERENCES

25X1D

CHART

SAC, US Air Target Chart, Series 200, Sheet 06-85-0A, 1st ed, Nov 59, scale 1:1200,000 (SECRET)

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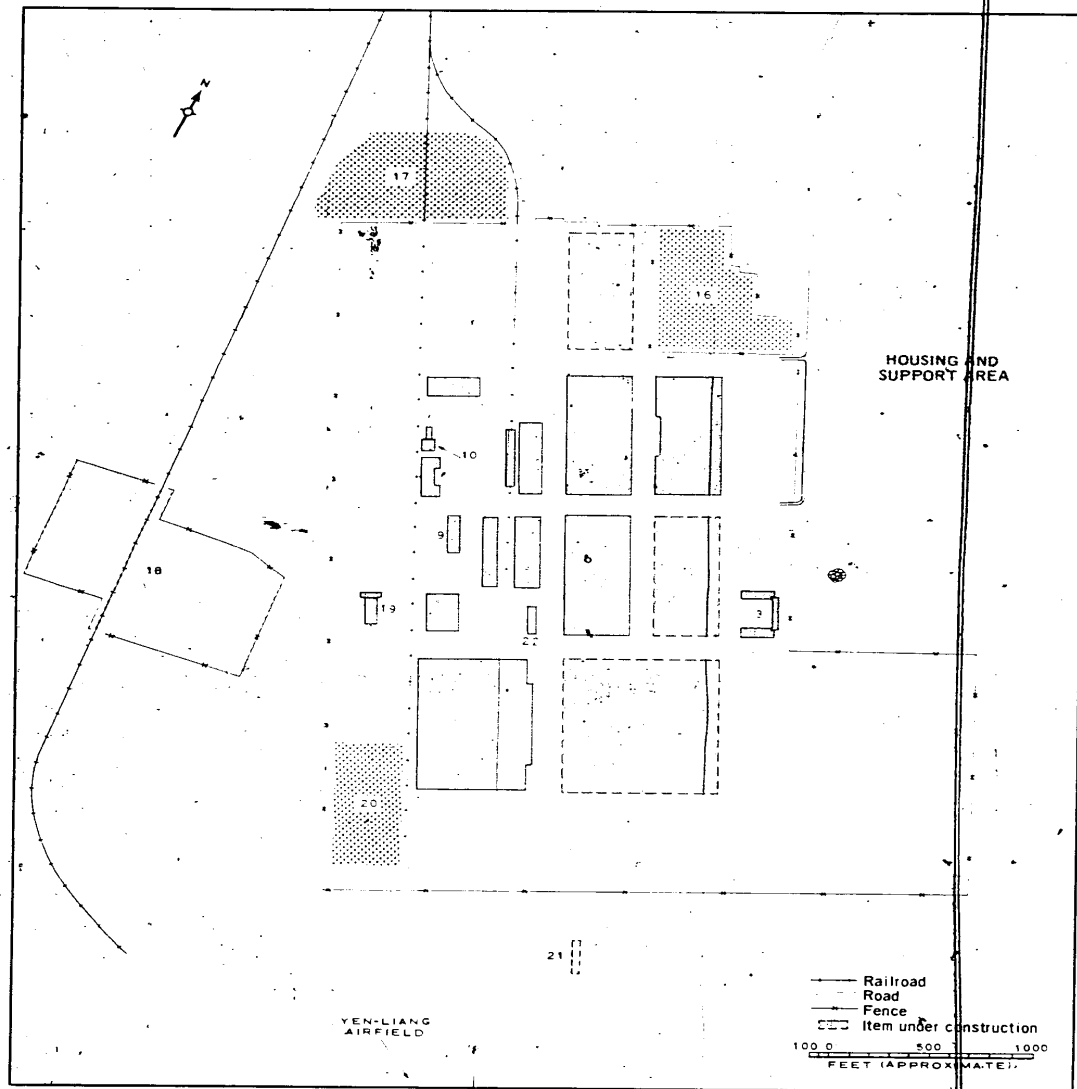


FIGURE 15. LAYOUT OF YEN-LIANG AIRFRAME PLANT.

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CIA/PIR-1003/64

Table 8. Description of Facilities, Yen-Hiang Airframe Plant
(Items are keyed to Figure 15.)

Item	Description Function	Dimensions (ft)	Floor-space (sq ft)
1	Assembly building under construction	800 x 760	608,000
2	Subassembly machine shop	800 x 565	452,000
3	Administration, two stories	Irregular	53,600
4	Assembly building under construction	720 x 320	230,400
5	Subassembly machine shop	720 x 320	230,400
6	Probable foundry	440 x 125	55,000
7	Warehouse	440 x 85	37,400
8	Workshop	240 x 165	39,600
9	Warehouse	240 x 65	15,600
10	Two work-shops	Various	31,450
11	Workshop	270 x 125	33,750
12	Warehouse, rail served	440 x 120	52,800
13	Workshop machine shop	720 x 320	230,400
14	Subassembly machine shop	720 x 320	230,400
15	Assembly building under construction	720 x 320	230,400
16	Construction materials storage	--	--
17	Construction materials storage	--	--
18	POL storage area, rail served	--	--
19	Steamplant and tower	--	--
20	Construction materials storage	--	--
21	Unidentified building under construction	175 x 45	7,875
22	Probable forge foundry	--	--
Total floor-space of completed buildings			1,470,275
Total floor-space of buildings under construction			1,068,800
Total floor-space of plant			2,539,075

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FIGURE 10. CHENG-TU AIRCRAFT ENGINE PLANT

- 32 -

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AIRCRAFT ENGINE PLANTS

CHENG-TU AIRCRAFT ENGINE PLANT, CHENG-TU, CHINA

(30-40X 101-04E)

25X1A

Cheng-tu Aircraft Engine Plant is located 2.5 nm east-southeast of the center of Cheng-tu, within the Cheng-tu industrial complex (Figures 1 and 16). The plant is enclosed by a wall approximately [REDACTED] and is served by both road and rail.

25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

When first observed on photography of [REDACTED] the aircraft engine plant was under construction and contained approximately 1,647,575 square feet of floorspace. A comparison of photography of [REDACTED] with that of [REDACTED] shows additions of approximately 1,046,450 square feet of floorspace, increasing the plant's floorspace to approximately 2,694,025 square feet. Three new buildings

were under construction at the time of [REDACTED] (Figure 16); upon completion these buildings will increase the floorspace of the plant to approximately 3,000,000 square feet. The installation appears to be in the final stages of construction.

The engine test facilities are housed in the test building (item 1, Figure 17 and Table 9). This building has four projecting wings, two containing double test cells and two containing single test cells. One wing includes a control and instrumentation section. The four cells are served by individual exhaust towers (Figure 27).

25X1D

25X1D

REFERENCES

25X1D

CHART

25X1A

25X1C

ACIC, US Air Target Chart, Series 100 [REDACTED] 1st ed., Oct 56, scale 1:100,000 (SECRET)

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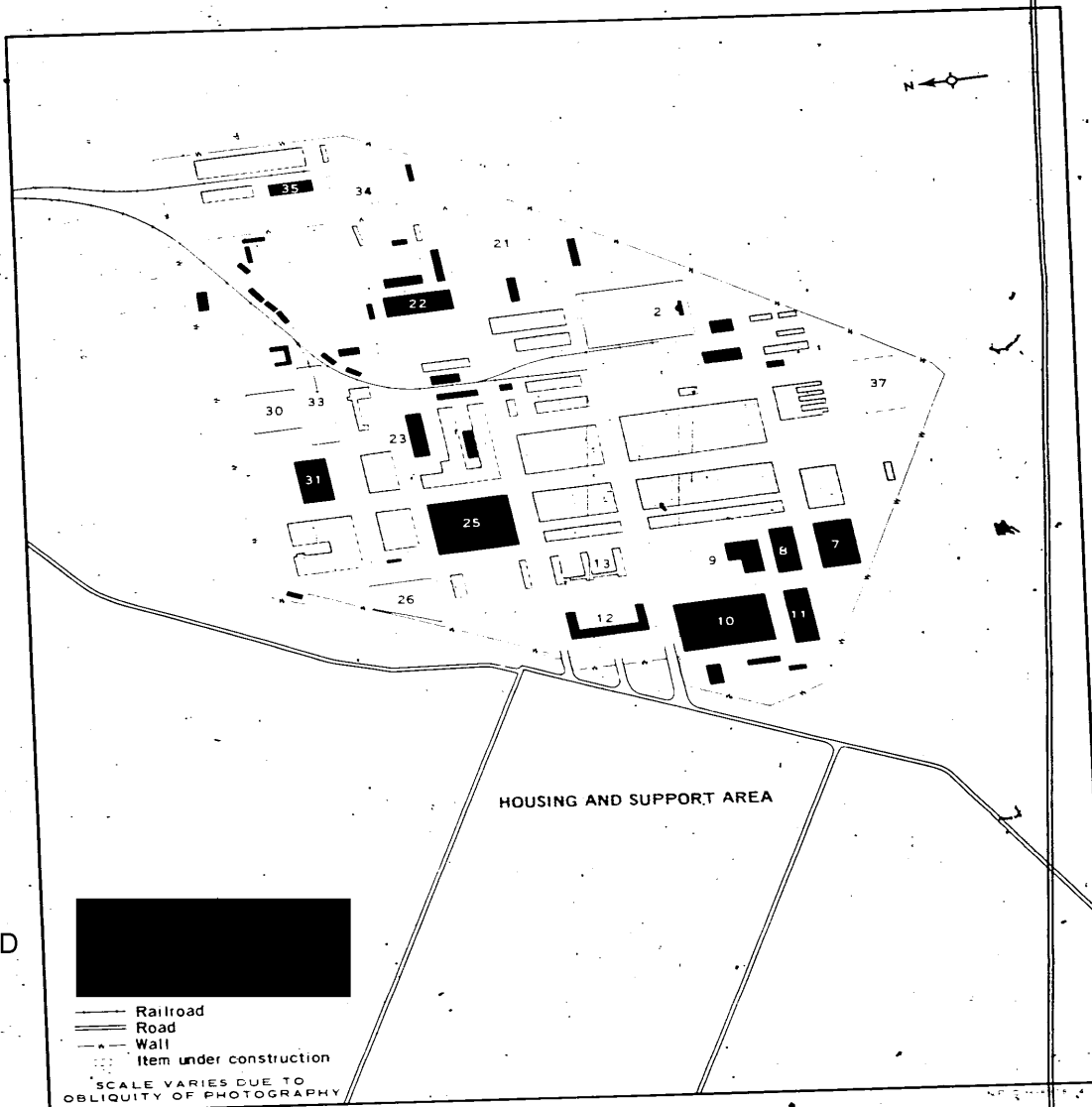


FIGURE 17. LAYOUT OF CHENG-TU AIRCRAFT ENGINE PLANT.

- 34 -

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CIA/PIR-1003/64

Table 6. Description of Facilities, Chengdu Aircraft Engine Plant
(Items are keyed to Figure 17)

Item	Description Function	Dimensions (ft)	Floor-space (sq ft)
1	Engine test building (see Figure 27)	--	--
2	Fuel storage, blending, and control station	--	--
3	Subassembly final assembly building	720 x 315	224,750
4	Subassembly machine shop	725 x 230	166,750
5	Workshop machine shop	725 x 90	65,250
6	Workshop machine shop	285 x 210	59,850
7	Workshop machine shop	300 x 200	60,000
8	Workshop machine shop	285 x 140	39,900
9	Workshop machine shop under construction:		
	Completed section	Irregular	38,625
	Section under construction	Irregular	158,600
10	Workshop machine shop	500 x 325	162,500
11	Workshop machine shop	360 x 140	50,400
12	Administration, two stories	Irregular	84,000
13	Administration warehouse	Irregular	40,650
14	Workshop machine shop	430 x 90	38,700
15	Workshop machine shop	430 x 230	98,900
16	Subassembly machine shop	430 x 285	122,550
17	Warehouse	290 x 90	26,100
18	Warehouse	340 x 85	26,350
19	Warehouse	905 x 100	90,500
20	Workshop	400 x 130	52,000
21	Building under construction	--	116,000 (approx)
22	Workshop	350 x 140	49,000
23	Forge foundry	255 x 100	25,500
24	Heavy machine shop	Irregular	133,950
25	Workshop machine shop	450 x 400	180,000
26	Three underground reservoirs	--	--
27	Workshop	280 x 190	53,200
28	Workshop	280 x 175	49,000
29	Steam powerplant	--	--
30	Gas plant	--	--
31	Workshop	285 x 180	51,300
32	Workshop machine shop	Irregular	120,350
33	Coal storage and handling facilities	--	--
34	Warehouse under construction	350 x 95	33,250
35	Workshop	215 x 95	20,425
36	Warehouse	600 x 140	84,000
37	Building under construction	--	70,000 (approx)
Total floorspace of numbered buildings			2,332,850
Total floorspace of other buildings			467,150
Total floorspace of plant			3,000,000

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FIGURE 15. CHU-CHOU AIRCRAFT ENGINE PLANT

- 36 -

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CHU-CHOU AIRCRAFT ENGINE PLANT, CHU-CHOU, CHINA

(27-00N 110-00E)

25X1A

Chu-chou Aircraft Engine Plant is located on the east bank of the Hsiang Chiang river, 3 nm southeast of the center of Chu-chou (Figures 1 and 18). The plant is served by both road and rail.

25X1D

25X1D

25X1D

25X1C

25X1D

When first observed on [REDACTED] the plant contained approximately 779,500 square feet of floorspace. A comparison of the [REDACTED] photography with that of [REDACTED] shows a substantial increase in floorspace in the original installation (Area A, Figure 19), amounting to approximately 220,500 square feet, as well as the construction of a new area (Area B, Figure 19) adjoining the north side of the main plant area. This new area, which contains an additional 215,800 square feet of floorspace, appears to be associated with the aircraft engine plant, since

its only access lies through the plant. The area contains a three-story laboratory, an assembly machine shop under construction, workshops or machine shops, two drive-through buildings, and five well dispersed storage/processing buildings. Three of the storage/processing buildings are constructed on aprons, possibly concrete, which suggests the handling of a corrosive-type substance. This area is served by a drainage system and an underground water reservoir, possibly for the flushing of spillage or waste.

The engine test facilities are housed in the test building (item 1, Figure 19 and Table 10). This building has three projecting wings, two containing single test cells and one containing a double test cell. The three wings are served by individual exhaust towers (Figure 28).

REFERENCE

25X1D

CHART

ACIC: US Air Target Chart, Series 200, Sheet 1 (East), 1st ed., Apr 60, Scale 1:200,000 (SECRET)

25X1C

25X1C

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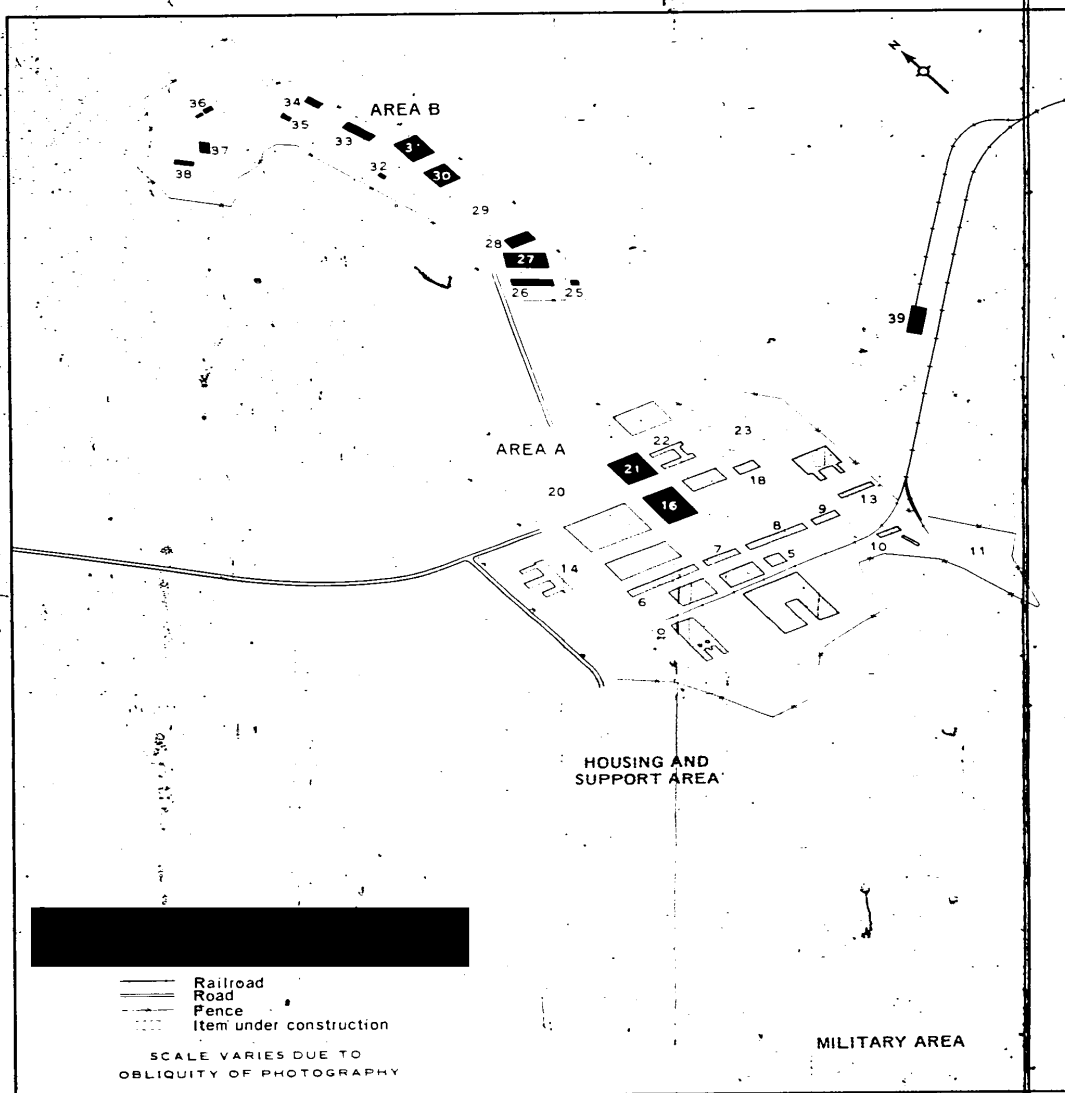


FIGURE 13. LAYOUT OF CHU-CHOU AIRCRAFT ENGINE PLANT.

- 38 -

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Table 1b. Description of Facilities, Class for Aircraft Engine Plant
(Items are grouped in Figure 13c)

Item	Description Function	Dimensions (ft)	Floorspace (sq ft)
1	Engine test building (see Figure 13c)	Irregular	113,550
2	Engine assembly shop	240 x 120	28,800
3	Workshop	240 x 105	25,200
4	Workshop	Irregular	23,000
5	Powerplant	480 x 50	12,750
6	Warehouse	255 x 50	21,000
7	Warehouse	420 x 50	7,750
8	Warehouse	155 x 50	9,625
9	Warehouse	Various	66,750
10	Two warehouses	455 x 150	9,000
11	Unidentified area, rail served	225 x 40	68,850
12	Workshop machine shop	Irregular	99,000
13	Warehouse	440 x 225	45,000
14	Administration, two stories	225 x 200	20,700
15	Workshop machine shop	230 x 90	9,450
16	Forge foundry	155 x 70	34,100
17	Forge foundry	Irregular	137,500 (approx)
18	Workshop machine shop	200 x 190	38,000
19	Building under construction	Irregular	17,150
20	Workshop machine shop	Irregular	45,600
21	Administration	285 x 160	600
22	Possible new construction site	30 x 20	32,250
23	Workshop machine shop	215 x 50	27,600
24	Storage building	230 x 120	12,800
25	Laboratory, three stories	160 x 80	63,550
26	Workshop machine shop	310 x 205	18,400
27	Workshop machine shop	160 x 115	29,600
28	Assembly machine shop under construction	185 x 160	2,475
29	Workshop machine shop	55 x 45	12,600
30	Workshop machine shop	150 x 70	4,750
31	Storage processing building	35 x 50	1,925
32	Drive-through building	35 x 35	1,000
33	Drive-through building	40 x 25	1,750
34	Storage processing building	30 x 105	3,500
35	Two storage processing buildings	70 x 50	3,000
36	Storage processing building	100 x 30	15,650
37	Storage processing building	135 x 70	1,062,225
38	Storage processing building	Irregular	153,575
39	Unidentified building	Irregular	1,215,800
Total floorspace of numbered buildings			1,062,225
Total floorspace of other buildings			153,575
Total floorspace of plant			1,215,800

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FIGURE 20. HSI-AN AIRCRAFT ENGINE PLANT

- 40 -

25X1D

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CIA/PIR-1003/64

HSI-AN AIRCRAFT ENGINE PLANT, HSI-AN, CHINA

(SI-22X 108-05E)

25X1A

Hsi-an Aircraft Engine Plant is located 6.1 nm due north of the center of Hsi-an and south of the Wei-ho River (Figures 1 and 20). The plant is served by both road and rail.

construction activity and the large amount of construction materials observed on [REDACTED] however, indicates that construction at this plant has not ceased, although the plant is nearing completion. The rate of construction between [REDACTED]

25X1D
25X1D

25X1D

The aircraft engine plant was observed under construction on [REDACTED]

25X1D

at that time the installation contained approximately 1,147,550 square feet of floorspace.

[REDACTED] indicates that construction possibly began in early [REDACTED]

25X1D

Photography from [REDACTED] shows a substantial increase in floorspace, amounting to approximately 1,482,450 square feet, which gives the plant a total floorspace of approximately 2,630,000 square feet. The latest

The engine test facilities are housed in the test building (item 12, Figure 21 and Table 11). This building has four projecting wings, two containing double test cells and two containing single test cells. The four wings are served by individual exhaust towers (Figure 30). A control and instrumentation section is being added to one of the wings.

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25X1D

photography covering this plant, from [REDACTED]

25X1D

shows no apparent change in facilities or construction

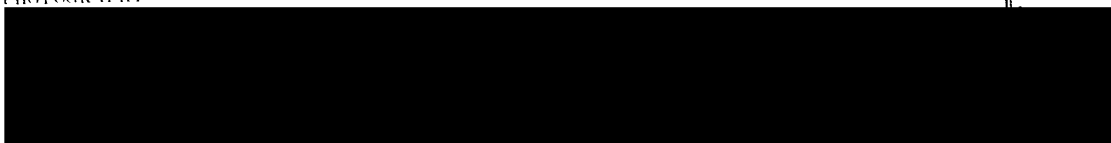
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status since [REDACTED] The amount of con-

REFERENCES

PHOTOGRAPHY

25X1D



CHART

ACIC, US Air Target Chart, Series 200, Sheet 1, S470A, 2d ed., Jan 60, Scale 1:250,000 (SECRET)

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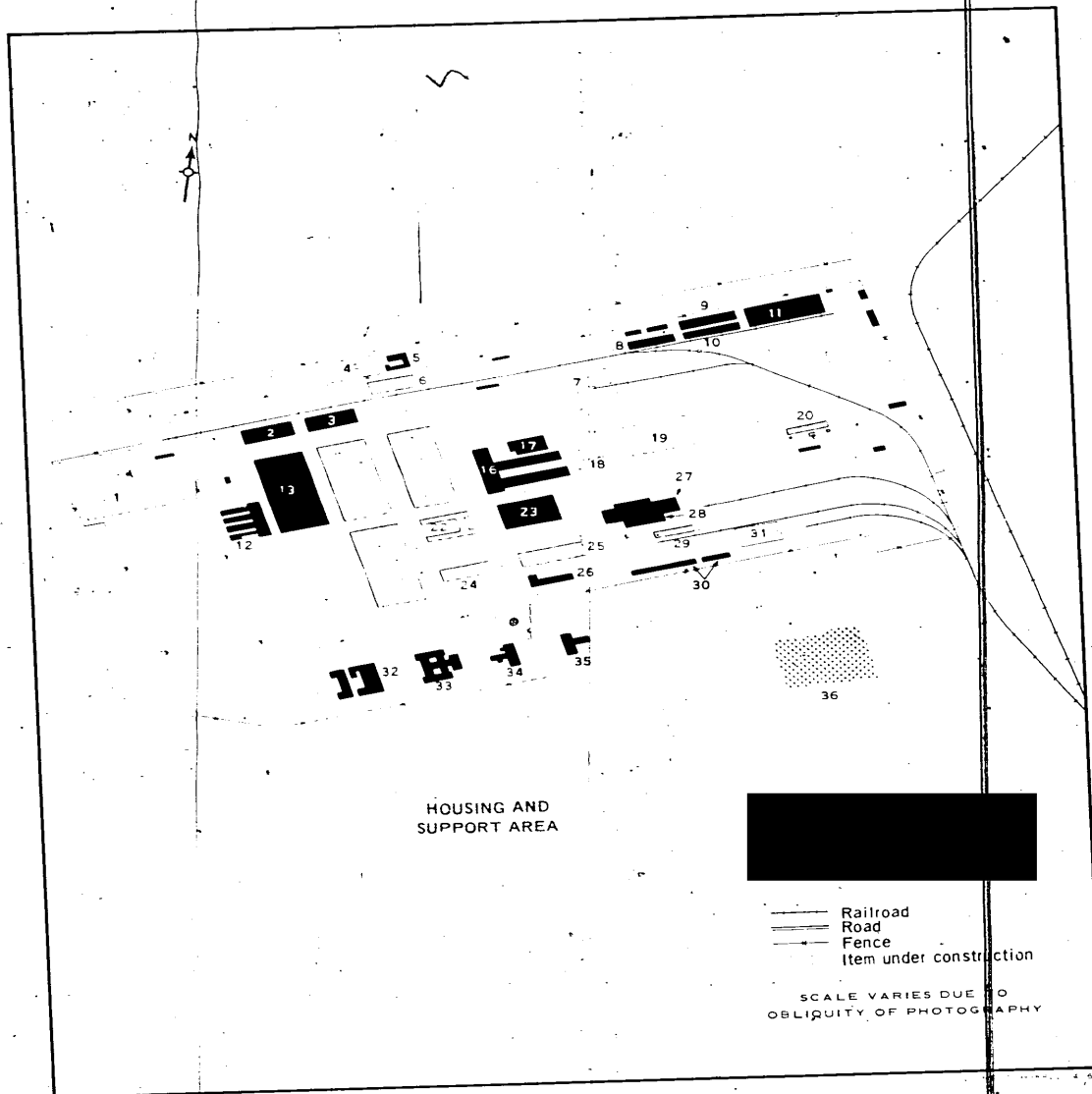


FIGURE 11. LAYOUT OF HSIAO AIRCRAFT ENGINE PLANT.

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CIA/PIR-1003/64

Table 11. Description of Facilities, Hsian Aircraft Engine Plant.
(Items are keyed to Figure 21.)

Item	Description Function	Dimensions (ft)	Floorspace (sq ft)
1	Fuel storage, blending, and control station under construction	--	--
2	Workshop machine shop	350 x 125	43,750
3	Workshop machine shop	350 x 125	43,750
4	Transformer yard	--	--
5	Unidentified building	Irregular	15,650
6	Workshop machine shop	330 x 130	42,900
7	Powerplant under construction	Irregular	18,000
8	One large and two small warehouses	Various	43,150
9	Warehouse	400 x 80	32,000
10	Warehouse	400 x 55	22,000
11	Workshop warehouse	540 x 165	89,100
12	Engine test building (see Figure 30)	--	--
13	Subassembly final assembly building	700 x 340	238,000
14	Subassembly machine shop	700 x 340	238,000
15	Subassembly machine shop	700 x 310	217,000
16	Foundry and machine shop	Irregular	136,800
17	Warehouse	Irregular	41,150
18	Workshop machine shop under construction	450 x 185	83,250
19	Workshop machine shop under construction	450 x 250	112,500
20	Warehouse and three storage buildings	Various	45,900
21	Assembly machine shop	700 x 340	238,000
22	Administration	Irregular	45,650
23	Workshop machine shop	385 x 250	96,250
24	Workshop machine shop	380 x 120	45,600
25	Forge foundry	500 x 135	67,500
26	Administration, three stories	Irregular	48,750
27	Workshop machine shop	Irregular	94,500
28	Unidentified building	300 x 70	21,000
29	Warehouse	300 x 70	21,000
30	Two warehouses	Various	34,500
31	Building site	--	--
32	Messhall	Irregular	61,600
33	Messhall	Irregular	52,500
34	Messhall	Irregular	22,550
35	Messhall	Irregular	22,550
36	Construction materials storage	--	--
Total floorspace of numbered buildings			2,334,850
Total floorspace of other buildings			295,150
Total floorspace of plant			2,630,000

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CIA PIR-1003 '64



FIGURE 22. SHEN-YANG AIRCRAFT ENGINE PLANT.

25X1D

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CIA PIR-1003 '64

SHEN-YANG AIRCRAFT ENGINE PLANT, SHEN-YANG, CHINA

(41-47N 123-29E)

25X1A

25X1A

25X1A

25X1A

25X1A

Shen-yang Aircraft Engine Plant and the adjacent main plant of Shen-yang Arsenal 90th (41-47N 123-29E) are located next to the Shen-yang Airfield Southeast in the Ta-tung ward of Shen-yang (Figures 1 and 22). Both of these plants are apparently involved in the production of aircraft engines and will be considered together in this report as the Shen-yang Aircraft Engine Plant. The installation is served by both road and rail.

25X1D

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The Shen-yang Aircraft Engine Plant was first observed in [redacted] on World War II prestrike, strike, and poststrike photography. This photography shows that damage caused by the aerial bombardment of this plant was not extensive, although some buildings were destroyed. Photography of the plant from [redacted] shows that a complete rehabilitation had been affected

and that newer buildings had replaced some of the older facilities. The first indication of a connection between the original aircraft engine plant and the main plant of Shen-yang Arsenal 90th appeared on [redacted] when aircraft engine test facilities were observed within the plant area of the arsenal (items 18 and 36, Figure 23 and Table 2). At the time of the latest photography, from [redacted]

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[redacted] the installation contained approximately 4,065,520 square feet of floorspace.

The adjacent Shen-yang Airfield Southeast has a northeast southwest concrete runway measuring 6,750 by 275 feet. The runway is served by a full-length parallel taxiway with four crossovers and several parking assembly aprons. Repair facilities are also located at this airfield. Photography from [redacted] shows a dismantled FARMER, a CAB, and two COLT at the airfield (Figure 22).

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REFERENCES

PHOTOGRAPHY

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CHART

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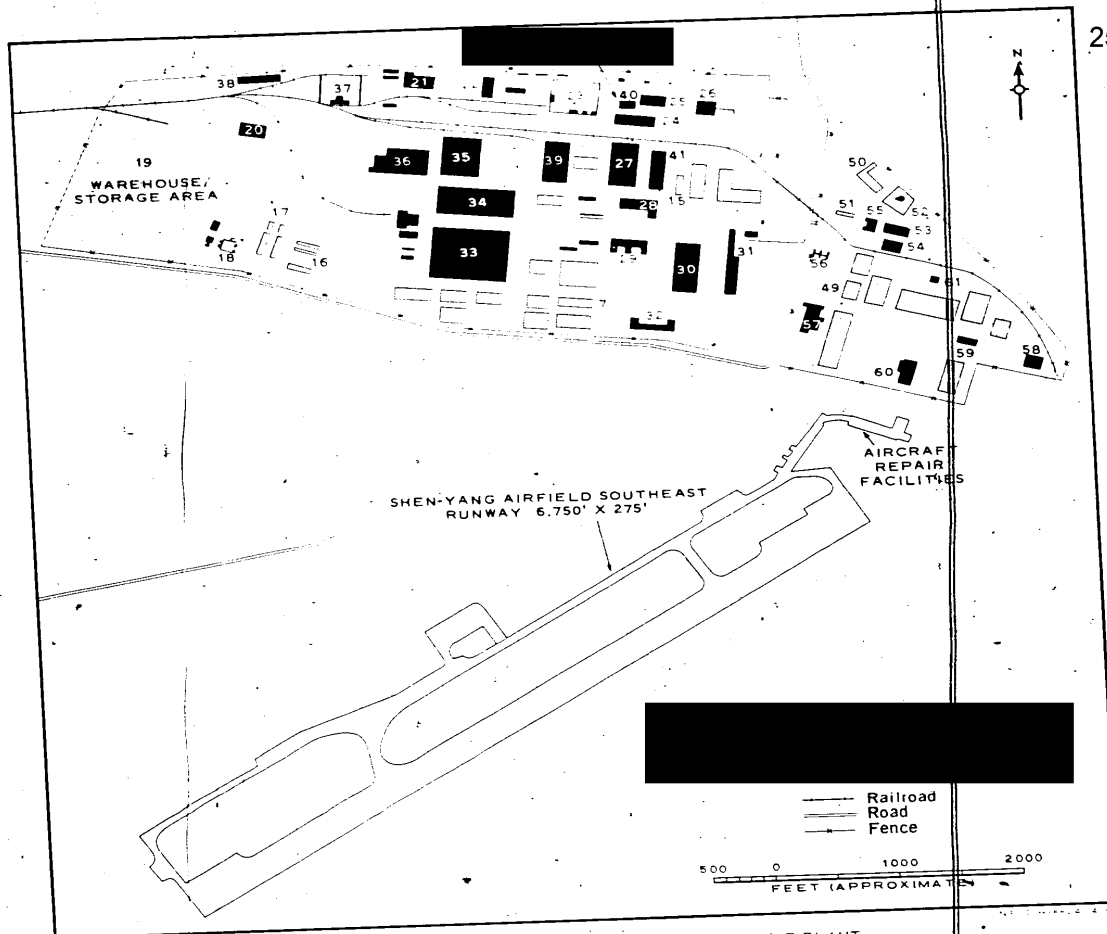
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ACIC, US Air Target Chart, Series 200, Sheet 2200-1 (H), 1st ed., Dec 61, Scale 1:200,000 (SECRET)

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FIGURE 23. LAYOUT OF SHEN-YANG AIRCRAFT ENGINE PLANT.

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Table 12. (Continued)

Item	Description Function	Dimensions (ft)	Floorspace (-sq ft)
8	Workshop machine shop	320 x 135	43,200
9	Workshop machine shop	215 x 135	29,025
10	Workshop machine shop	330 x 260	85,800
11	Workshop machine shop	210 x 175	36,750
12	Workshop machine shop	240 x 85	20,400
13	Workshop machine shop	205 x 125	25,625
14	Possible forge	Irregular	70,175
15	Three warehouses	345 x 115	39,675
16	Four warehouses	240 x 50	12,000
17	Engine test buildings (see Figure 33)	Various	38,700
18	Warehouse storage area	Various	41,500
19	Workshop	210 x 100	--
20	Workshop machine shop	--	304,500
21	Warehouse	340 x 105	44,100
22	Transformer yard	225 x 105	36,600
23	Workshop machine shop	175 x 150	21,000
24	Workshop	425 x 250	--
25	Powerplant	Irregular	35,700
26	Assembly machine shop	Irregular	23,625
27	Workshop machine shop	370 x 250	26,250
28	Administration, two stories	70 x 15 (each)	106,250
29	Assembly machine shop	Irregular	37,200
30	Fifteen fenced storage buildings	665 x 490	44,200
31	Administration laboratory, two stories	665 x 275	142,500
32	Assembly building	360 x 330	15,750
33	Assembly machine shop	--	51,700
34	Assembly building	--	325,850
35	Engine test building (see Figure 32)	--	182,875
36	Fuel storage, blending, and control station	350 x 80	118,800
37	Warehouse	400 x 225	--
38	Assembly machine shop	150 x 75	28,000
39	Tall building, unidentified	440 x 130	90,000
40	Workshop machine shop	580 x 170	11,250
41	Assembly machine shop	360 x 185	57,200
42	Workshop warehouse	185 x 185	98,600
43	Foundry	325 x 200	66,600
44	Workshop machine shop	530 x 220	34,225
45	Assembly machine shop	300 x 160	65,000
46	Assembly machine shop	250 x 170	116,600
47	Workshop machine shop	170 x 115	48,000
48	Workshop	--	42,500
49	Engine test building (see Figure 34)	150 x 45	19,500
50	Warehouse	--	6,75
51	Fuel storage, blending, and control station	230 x 100	23,000
52	Workshop machine shop	165 x 110	18,150
53	Workshop machine shop	135 x 135	18,225
54	Workshop machine shop	Irregular	16,400
55	Administration	Irregular	49,300
56	Administration, two stories	170 x 145	24,500
57	Workshop machine shop	180 x 70	12,600
58	Warehouse	250 x 110	27,000
59	Warehouse	--	--
60	Powerplant	--	3,062,075
61			1,000,445
Total floor-space of numbered buildings			1,062,520
Total floor-space of other buildings			--
Total floor-space of plant			--

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FIGURE 24. WU-KUNG AIRCRAFT ENGINE PLANT

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WU-KUNG AIRCRAFT ENGINE PLANT, WU-KUNG, CHINA

(S4-16X 108-16E)

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Wu-kung Aircraft Engine Plant, designated in the BE as Hsi-an Airframe Plant Wu-kung Airfield, is located adjacent to the Wu-kung Airfield (9.2 nmeast-south-east of the center of Wu-kung, Figures 1 and 24). The plant is served by both road and rail.

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The area now occupied by the aircraft engine plant was first observed in [REDACTED] at that time construction of the plant had not yet begun.

[REDACTED] shows the plant under construction and containing approximately 546,975 square feet of floorspace. Photography from [REDACTED] shows the addition of several buildings, containing approximately 183,330 square feet of floorspace. A comparison of photography from [REDACTED]

[REDACTED] with that from [REDACTED] reveals a new building under construction (item 7, Figure 25, and Table 13), which will contain approximately 40,500 square feet of floorspace when completed, a second large building (size undetermined) under construction (item 12, Figure 25 and Table 13),

and an area of construction containing at least five new buildings (item 20, Figure 25). The plant now contains approximately 770,805 square feet of floorspace. Its location adjacent to the Wu-kung Airfield and the large area available for expansion could indicate the future construction of an airframe plant here.

The engine test facilities are housed in the test building (item 1, Figure 25 and Table 13). This building has four projecting wings, two containing double test cells and two containing single test cells. One wing includes a control and instrumentation section. The four test cells are served by individual exhaust towers (Figure 35).

Wu-kung Airfield has an east-west concrete runway measuring 8,200 by 250 feet. The runway is served by a full-length parallel taxiway with four crossovers and numerous hardstands and parking assembly aprons. Two BADGER (Figure 24), 11 BULL, and 24 MOOSE MAX were observed at the airfield in [REDACTED]

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REFERENCES

PHOTOGRAPHY

25X1D

25X1D

CHART

ACIC, US Air Target Chart, Series 2000, Sheet 0284-15A, 2d ed., Jan 60, scale 1:200,000 (SECRET)

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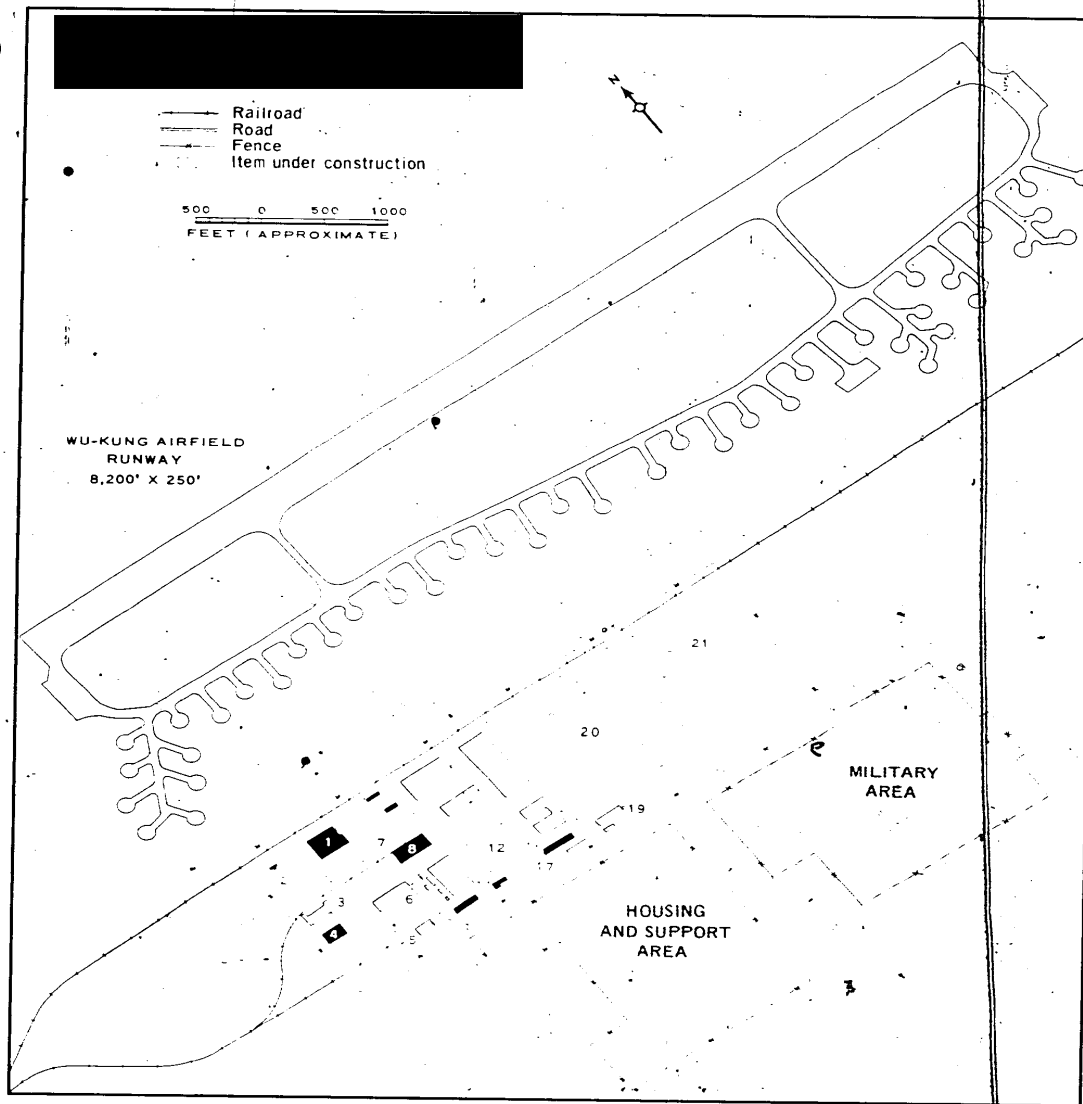


FIGURE 25. LAYOUT OF WU-KUNG AIRCRAFT ENGINE PLANT.

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Table 13. Description of Facilities, Wu-kang Aircraft Engine Plant
(Items are keyed to Figure 25)

Item	Description Function	Dimensions (ft)	Floor space (sq ft)
1	Engine test building (see Figure 35)	--	--
2	Fuel storage, blending, and control station	--	--
3	Workshop	Irregular	25,800
4	Workshop	180 x 125	22,500
5	Powerplant	--	--
6	Workshop	300 x 85	25,500
7	Building under construction	450 x 90	40,500
8	Workshop warehouse	300 x 125	37,500
9	Workshop machine shop	300 x 225	67,500
10	Warehouse	190 x 60	11,400
11	Possible foundry	Irregular	10,400
12	Building under construction	--	--
13	Workshop machine shop	320 x 125	40,000
14	Workshop machine shop	370 x 200	74,000
15	Workshop machine shop	600 x 225	135,000
16	Workshop machine shop	Irregular	55,125
17	Transformer yard	--	--
18	Administration, two stories	Irregular	25,850
19	Administration, two stories	Irregular	29,400
20	Area under construction	--	--
21	Construction materials storage	--	--
Total floor-space of numbered buildings			599,975
Total floor-space of other buildings			170,830
Total floor-space of plant			770,805

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TEST FACILITIES

WIND TUNNEL AND GAS DYNAMICS FACILITY

The wind tunnel and the gas dynamics facility shown in Figure 26 are located at Shen-yang Airframe Plant 112. Both appear to be in the final stages of construction and are not yet capable of operation. Other facilities may be added to enhance research capabilities in the field of aerodynamics at the Shen-yang plant.

The wind tunnel, a subsonic continuous-flow type, consists of a control, instrumentation, and laboratory section (A), a first diffuser (B), a

power section (C), a second diffuser (D), a settling section (E), a contraction section (F), and a test section (G).

The gas dynamics facility consists of a building (H) which possibly houses at least one supersonic wind tunnel, and a battery of 15 spherical storage tanks, with bases available for nine additional tanks. Each tank has a diameter [REDACTED] and a volume of [REDACTED].

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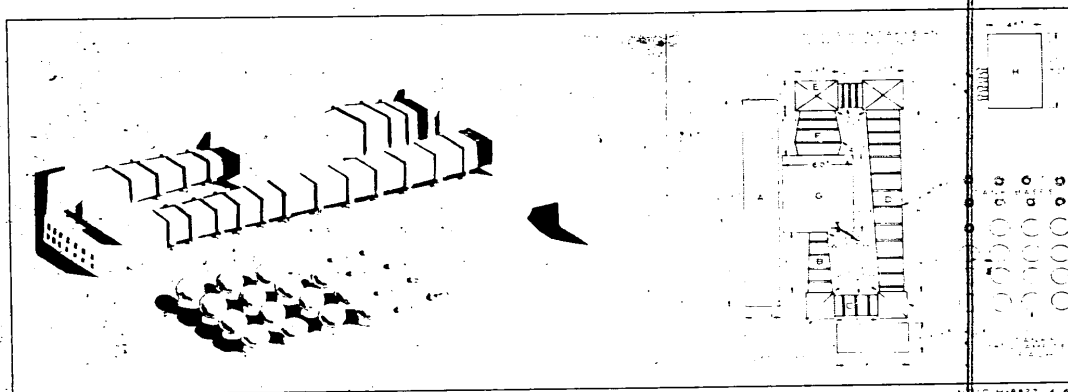


FIGURE 26. PLAN AND PERSPECTIVE VIEWS OF WIND TUNNEL AND GAS DYNAMICS FACILITY, SHEN-YANG AIRFRAME PLANT 112.

ENGINE TEST BUILDINGS

The aircraft engine test buildings and the fuel storage, blending, and control stations have been two key features in the identification of aircraft engine plants in Communist China. The engine test buildings, with the exception of those shown in Figures 33 and 34, are of the same basic design; however, since these buildings vary

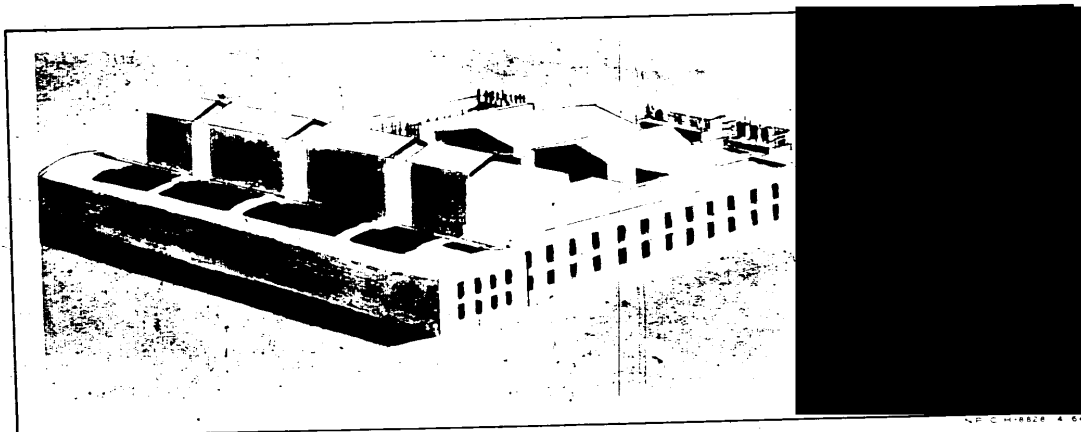
somewhat in size, configuration, stage of construction, and the number and type of test cells, they will be described separately.

The engine test building at the Cheng-tu Aircraft Engine Plant (Figure 27) appears to be in the final stages of construction. The building consists of a base wing for engine servicing

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FIGURE 27. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, CHENG-TU AIRCRAFT ENGINE PLANT.

and inspection, and four projecting wings. Two of the wings house single U-type test cells and two house double U-type test cells. One wing includes a control and instrumentation section.

The engine test building at the Chu-chou Aircraft Engine Plant (Figure 28) appears to

be complete. The building consists of a base wing, used for engine servicing, inspection, control, and instrumentation; and three projecting wings. Two of the wings house single U-type test cells; the third houses a double L-type test cell. The two U-type test cells were converted from L-type cells after

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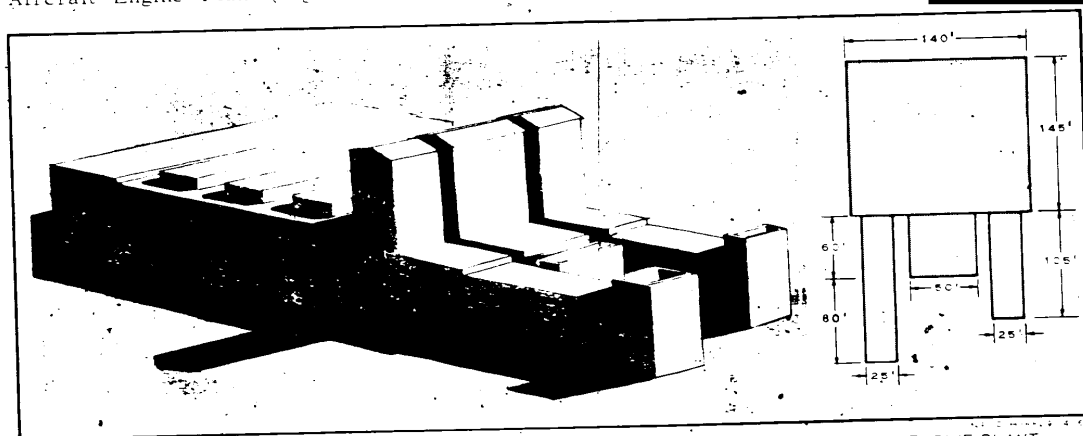


FIGURE 28. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, CHU-CHOU AIRCRAFT ENGINE PLANT.

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The engine test building at the Ha-erh-pin Aircraft Engine Plant (Figure 29) appears to be complete. The building consists of a base wing for engine servicing and inspection, and four

projecting wings housing single U-type test cells; one wing includes a control and instrumentation section.

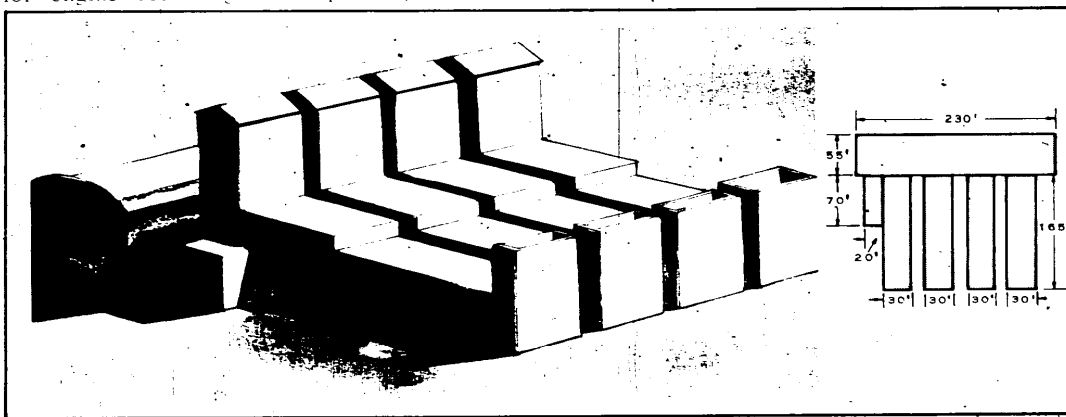


FIGURE 29. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, HA-ERH-PIN AIRCRAFT ENGINE PLANT.

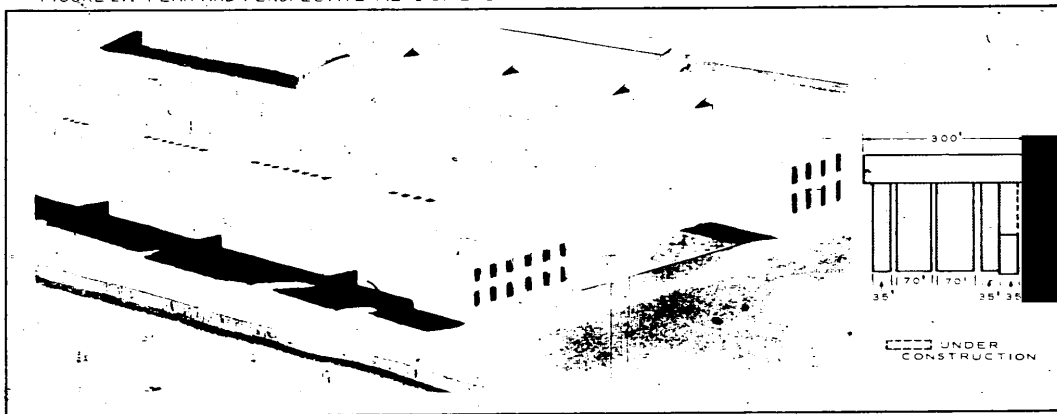


FIGURE 30. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, HSI-AN AIRCRAFT ENGINE PLANT.

The engine test building at the Hsi-an Aircraft Engine Plant (Figure 30) appears to be nearing completion. The building consists of a base wing for engine servicing and inspection,

and four projecting wings. Two of the wings house single U-type test cells, and two house double U-type cells. A control and instrumentation section is being added to one of the wings.

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The engine test building at the Ku-tien-tzu Aircraft Assembly and Repair Plant (Figure 31) appears to be complete. The building consists of a base wing for engine servicing and in-

spection, and three projecting wings. Two of the wings house single L-type test cells, and one houses a double L-type cell. One wing includes a control and instrumentation section.

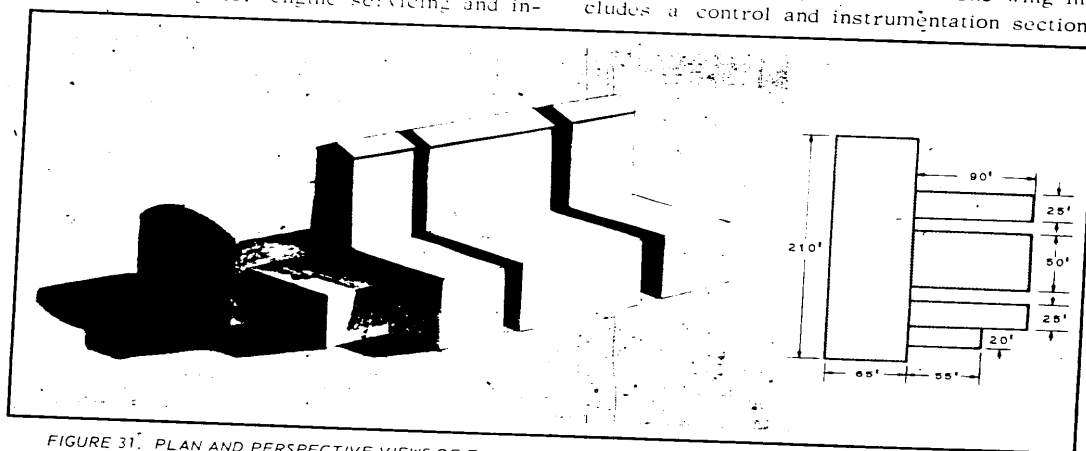


FIGURE 31. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, KU-TIEN-TZU AIRCRAFT ASSEMBLY AND REPAIR PLANT.

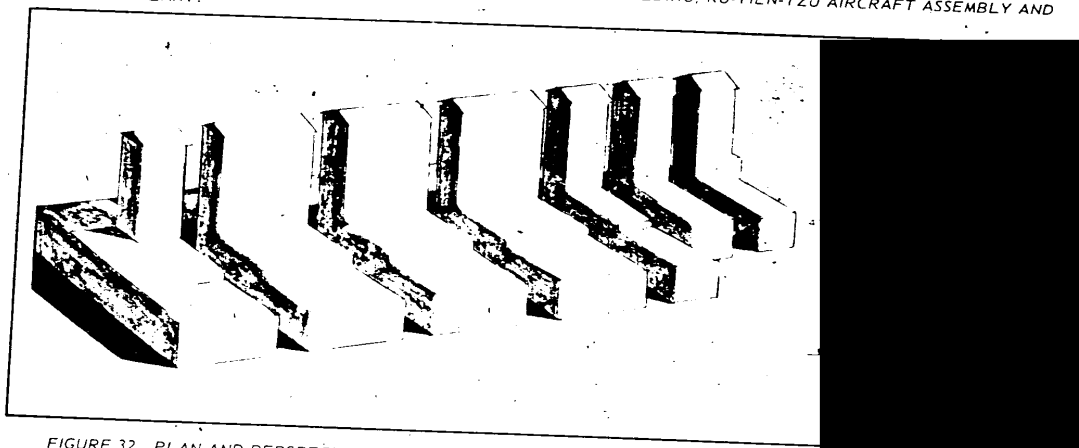


FIGURE 32. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, ITEM 36, SHEN-YANG AIRCRAFT ENGINE PLANT. See Figure 23 and Table 12.

The engine test buildings at the Shen-yang Aircraft Engine Plant are shown in Figures 32, 33, and 34. The building shown in Figure 32 appears to be complete; it consists of a base wing

for engine servicing and inspection, and seven projecting wings. Three of the wings house double L-type test cells, and three house single L-type cells. The seventh wing contains a single

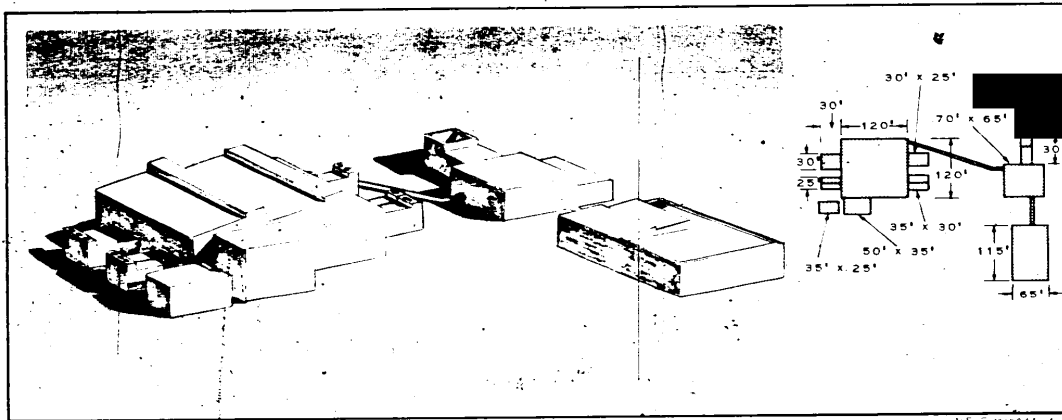
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FIGURE 33. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, ITEM 18, SHEN-YANG AIRCRAFT ENGINE PLANT. See Figure 23 and Table 12.

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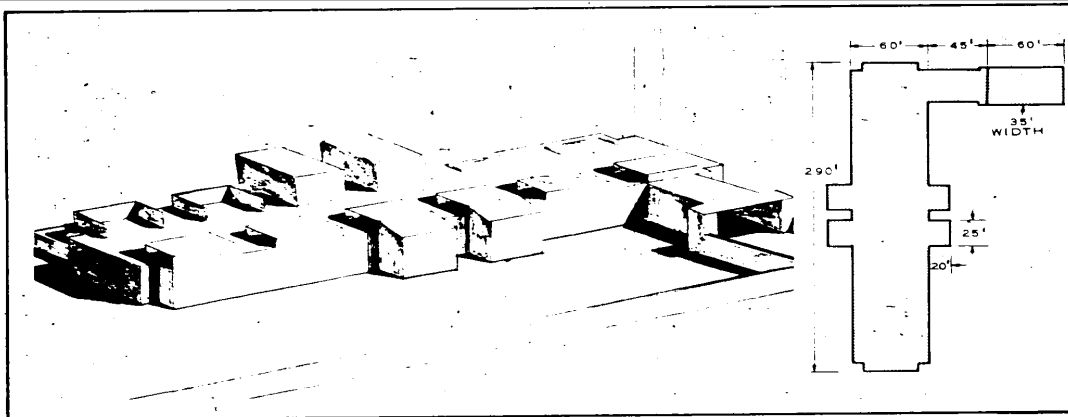


FIGURE 34. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, ITEM 50, SHEN-YANG AIRCRAFT ENGINE PLANT. See Figure 23 and Table 12.

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The engine test building shown in Figure 34 is one of the original buildings of the Shen-yang Aircraft Engine Plant. Currently undergoing modification, the rectangular building contains six through-type test cells. One of the cells has been extended, and an enclosed, possibly concrete blast apron now serves the cell.

The engine test building at the Wu-kung

Aircraft Engine Plant (Figure 35) appears to be complete. The building consists of a base wing for engine servicing and inspection, and four projecting wings. Two of the wings house double L-type test cells, and two house single L-type cells. One wing includes a control and instrumentation section.

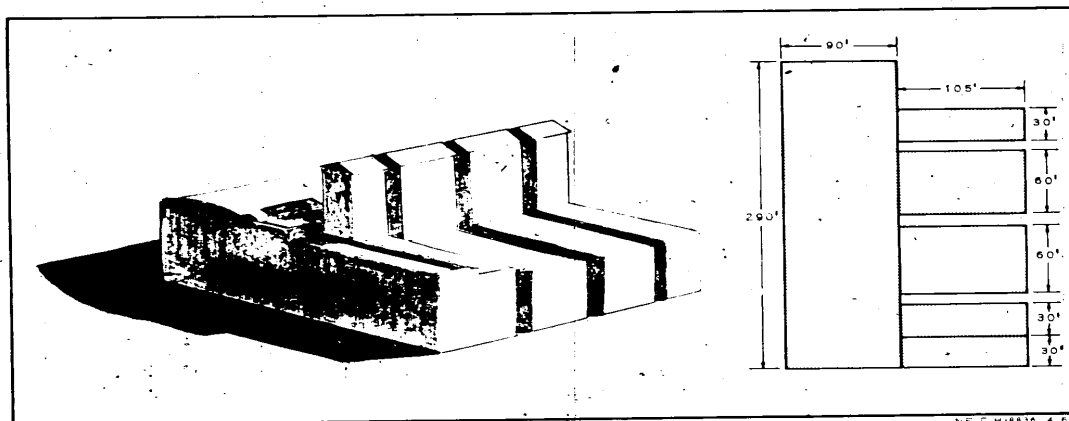


FIGURE 35. PLAN AND PERSPECTIVE VIEWS OF ENGINE TEST BUILDING, WU-KUNG AIRCRAFT ENGINE PLANT.

AIRCRAFT TEST REVETMENTS

The aircraft test revetment represented in Figure 36 is located at Shen-yang Airframe Plant 112; similar test revetments exist at Cheng-tu Airframe Plant, Ha-erh-pin Airframe Plant, Ku-tien-tzu Aircraft Assembly and Repair Plant, and Nan-chañg Airframe Plant. The revetment at Shen-yang Airframe Plant 112 is the largest of these and is capable of testing two aircraft simultaneously. The others appear to be single units.

The revetments are constructed of banked earth and appear to be finished with soil sta-

bilizer or a similar hard-surface material. The inner rear banks are protected by blast walls or blast deflectors; the large revetment at Shen-yang utilizes a deflector and has a blast wall which divides the revetment into two areas (Figure 36). The revetments are served by concrete aprons and control or instrumentation buildings.

The exact purpose of these test revetments is not known, but it is believed that they serve to abate noise during the measurement and calibration of the performance of aircraft engines.

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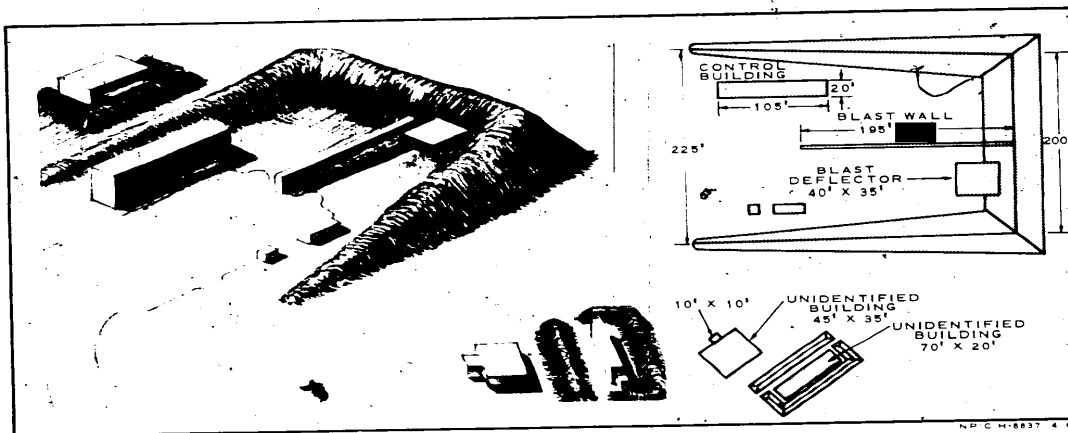


FIGURE 36. PLAN AND PERSPECTIVE VIEWS OF AIRCRAFT TEST REVETMENT, SHEN-YANG AIRFRAME PLANT 112.

FUEL STORAGE, BLENDING, AND CONTROL STATIONS

Fuel storage, blending, and control stations are located at all Chinese Communist aircraft engine plants except the plant at Chu-chou. They are of three basic types (Figures 37-41). Both Type 1 (Figure 37) and Type 2 (Figure 38)

are found at the Shen-yang Aircraft Engine Plant. Type 3 is shown in three separate stages of construction; the first stage (Figure 39) is found at the Ha-erh-pin Aircraft Engine Plant, the second stage (Figure 40) is found at the

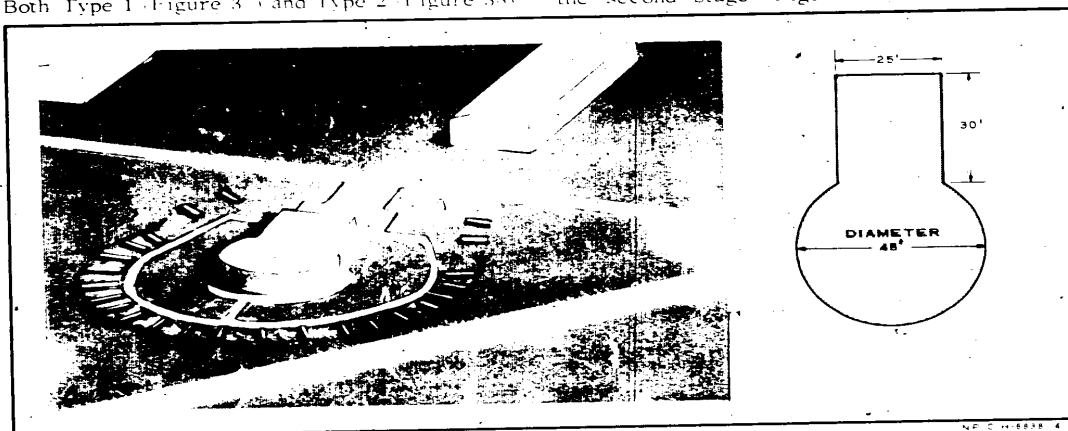


FIGURE 37. PLAN AND PERSPECTIVE VIEWS OF FUEL STORAGE, BLENDING, AND CONTROL STATION, TYPE I, SHEN-YANG AIRCRAFT ENGINE PLANT.

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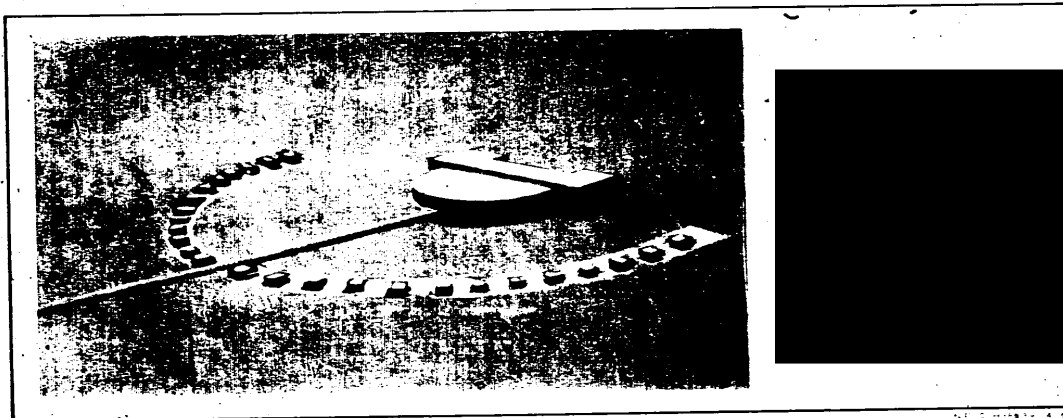
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FIGURE 38. PLAN AND PERSPECTIVE VIEWS OF FUEL STORAGE, BLENDING, AND CONTROL STATION, TYPE 2, SHEN-YANG AIRCRAFT ENGINE PLANT.

Hsi-an Aircraft Engine Plant, and the completed facility (Figure 41) is found at the Cheng-tu Aircraft Engine Plant. The third type of station is also located at the Ku-tien-tzu Aircraft Assembly and Repair Plant and at the Wu-Kung

Aircraft Engine Plant.

Each station consists of a blending and control building and a semicircular arrangement of underground horizontal fuel storage tanks. The stations are served by pipelines

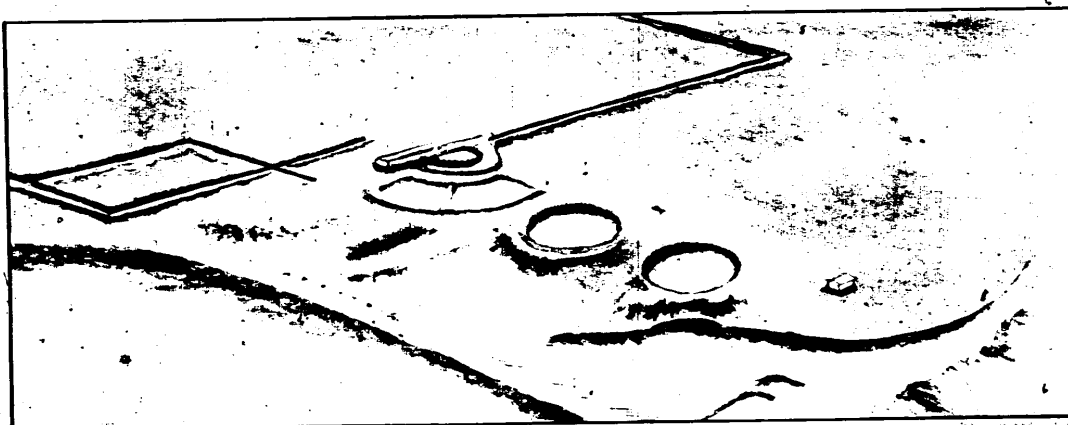


FIGURE 39. PERSPECTIVE VIEW OF FUEL STORAGE, BLENDING, AND CONTROL STATION, TYPE 3, IN FIRST STAGE OF CONSTRUCTION, HA-ERH-PIN AIRCRAFT ENGINE PLANT.

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FIGURE 40. PERSPECTIVE VIEW OF FUEL STORAGE, BLENDING, AND CONTROL STATION, TYPE 3, IN SECOND STAGE OF CONSTRUCTION, HSI-AN AIRCRAFT ENGINE PLANT.

from railroad loading and unloading points. The chief difference between Type 1 and Type 2 is in the configurations of the blending and control buildings. Type 3 differs from Type 2 in having four large underground fuel storage tanks in addition to the horizontal tanks.

Although the exact function of these stations is unknown, it is believed that they serve to blend fuels and control the flow of fuels to the nearby engine test buildings, to which they are apparently connected by underground pipelines.

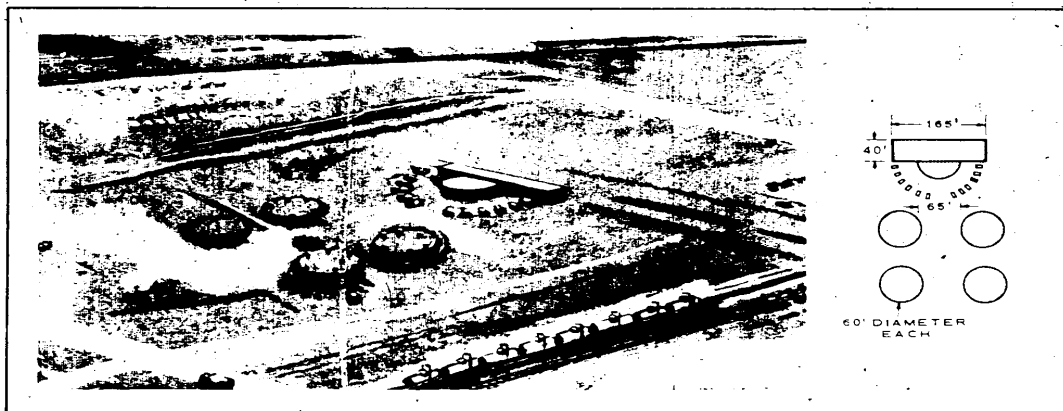


FIGURE 41. PLAN AND PERSPECTIVE VIEWS OF COMPLETED FUEL STORAGE, BLENDING, AND CONTROL STATION, TYPE 3, CHENG-TU AIRCRAFT ENGINE PLANT.

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